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MIND

A QUARTERLY REVIEW OF PSYCHOLOGY AND PHILOSOPHY.

EDITED BY

PROF. G. F. STOUT,

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A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY

I.—THE IMPORTANCE OF THE SENSORY ATTRIBUTE OF ORDER.

BY H. J. WATT.

1. THE ATTRIBUTE AS SUCH.

THE attribute of order seems to be a most important feature of sensory experience. I have endeavoured for some time to show what can be done with its help towards the elucidation of the elements and complexities of the senses.[1] It seems worth while to display the significance of this attribute in a broader manner. In fact the interests of psychology and of epistemology (which falls largely, if not wholly, within the range of psychology) call for as broad a treatment as possible.

Let me first briefly state the nature and function of sensory order. It is a useful procedure in psychology to compare data of our various senses with one another so that we may, if possible, bring them under general terms of description, and thereby co-ordinate their variations exhaustively. We find of course that ground for this work has been well prepared by our predecessors. But the results they obtained are not such as could have been expected to be entirely convincing either to them or to us. At the best they seem inconclusive and fragmentary. The attributes we find in commonest acceptance are quality and intensity. There are not many psychologists now who would refuse to add to these an

[1] *Cf. The Psychology of Sound*, Cambridge, 1917, and papers in *The British Journal of Psychology*.

attribute of extensity, although most of them might decline to acknowledge its presence in every sensation. But I do not wish to enter into a discussion of the question whether any attribute of sensation must belong to all kinds of sensation once it is admitted as fundamental for any one sensation or sense.[1]

These three attributes may be said to be plainly evident on the face of (at least some) sensations. The probable reason why the attribute of order has not passed from the stage of latent or everyday (conceptual) usage to the precision of scientific objectivity is its lack of such clean-cut simplicity. We find an order of "points" in the visual field, an order of touches on the fingers, an order of tones in the musical scale, an order of colours in the spectrum, and so on; but these orders are not very obviously similar to one another. These systems of colours and of tones seem to belong together as qualities, while the others are clearly systems of localisations.

But why be concerned about such lack of unity, one might ask? May not any group of things form the basis of an orderly system? Surely the order of the system, on whatever basis of sensation (or of anything else) it may rest, and as constructed, is of conceptual origin. The "stuff" of the objects in question presents them in some sort of sequence or series, but our concepts label them with their own orders.

There can be no doubt that this latter process of labelling does occur: for example, in the case of the spectral colours. The local differentiation of the spectral lines of interference helps this procedure greatly, of course. Whether a purely qualitative group of differences could be conceptually ordered, apart from any correlative ordinal series, would form an interesting problem. Good examples for this problem lie to hand in the smells, the tastes, and the colours (especially if from the last of these we abstract the possible differences of "density,"[2] putting up only the six primaries white, black, yellow, blue, green, red, all of equal brightness). The question would then be: does the stuff of these differences give any basis for preferring one scheme of arrangement to any other? Or, is not an ordinal system conceptually inapplicable to them, except in a perfectly arbitrary manner?

Our present interest, however, begins at the opposite extreme. Namely: there are systems of objective differences

[1] For these and other questions I must refer the reader to my previous papers.

[2] à la Brentano, *Untersuchungen zur Sinnes-psychologie.*

whose ordering is neither dependent on caprice of the intellect nor on any (ordinal) system with which these differences may be objectively correlated, but is entirely (and objectively) inherent in them. Some of these systems are presented without any other variant (such as quality or intensity) in their members (not as between systems, but within any single system) than this inherent ordinal one. In so far as these systems belong to the senses, and taken in their simplest forms, they constitute the range of variation of the ordinal attribute as such. We find them in all sensory localisations and positions and in the pitches of sounds. I have pointed out elsewhere that ordinal differentiation is the common feature of these three kinds of sensory variants. It has been a fundamental error of previous psychological theory to attempt to analyse sensations on the assumption that the localisation that appears in the majority of the senses in some form or other is either a primary and simple variant or is a product of the combination of qualitative and intensive differences. These two assumptions characterise what are known as the nativistic and genetic theories of space perception. The nativistic theory is correct in so far as it denies the derivation of space from any attribute that is not essentially ordinal, in which sense the genetic theory is quite untenable. But localisation seems to be genetic in origin in so far as it is not an attribute of any elementary sensation but supervenes upon a certain synthesis or integration of these elements. It seems most probable to me that we can give the name of localisation only to that co-ordination of the ordinal systems of the different senses that is brought about by the similar determination of these senses by the physical objects that stimulate them. Or to reverse the statement: space is the name for a certain system of correlations between the (or some of the) ordinal differences of the various senses. In its sensory form we find this system already present when we begin any sort of conceptual activity. It is not itself, however, a conceptual ordinal system, as is the space of any form of (mathematical) thought. The ordinal system of sensory space must be prior, both in the individual and in general development, to any form of thought.

It is a corollary upon this fixation of the status of space that there may be ordinal systems of sense that are not spatial. This seems to be realised in ourselves only in the case of hearing, where the series of pitches forms a single dimension that is free of any sort of direct correlation with the ordinal systems of the other senses. It is a dimension to itself; every simple or pure tone of a definite number of

vibrations lies round about one and only one point of the series, and the series is a continuity from lowest tone to highest tone. All sounds have, of course, besides, some sort of spatial localisation, which they obtain through the combined functions of the two ears. The foundation of this (spatial) correlation is necessarily, like the essence of pitch, ordinal. The difference is that the ordinal basis of it is independent of ("transverse" to) the dimension that constitutes pitch. And this transverse dimension is really correlated with the ordinal dimensions of the other senses.

In so far as any tone (or sound) is accurately localised, it stands in a system of four dimensions, namely, the three dimensions of space and the dimension of pitch. Thus the mysterious fourth dimension is realised in our experience in a very simple and inevitable way. The only blemish in the example is that sound of itself (or purely auditorily) is probably localised not in three spatial dimensions, but only in one, namely, in the transverse line of orders given by the two ears. But the case would hold if we granted sound the localisation that pertains to its source in the visual field. The interest of the matter is, of course, theoretical or speculative, not practical. The material organisation of the world may conceivably make it impossible to find anything that is qualified by four, and not less than four (such)[1] lines of ordinal variation. The upper limit may be three. But in our sensory experience we do find present more than three lines of ordinal variation, namely, for one instance, three dimensions of space and one of pitch. As far as these are considered merely as forms of experience and apart from their real dependence upon physical variants, they set no limitation upon one another. Therefore, from the point of view of sensory experience any number of dimensions is conceivable in connexion with one and the same sensory quality. At the most, however, only five seem to be actually found, namely, one of pitch, three of space, and one of time. All these are essentially ordinal.

A second dimension of pitch is quite conceivable, although there is not a trace of it in our hearing actually. How it might be realised, we cannot tell. But the actual basis of our third dimension of vision (stereoscopy) shows us that the range of possibilities is open and large. Each eye yields us only two dimensions: the lateral disparity of the images of the two eyes gives us solidity, which is thus realised without the use of a solid mass of physiological receptors. For all

[1] I call them "systemic" in distinction from temporal order

we know a second dimension of pitch might be realisable in ourselves, if we could procure the necessary physical variations required for, say, a pitch disparity of the two ears. But this sort of speculation is perhaps unprofitable.

The articular sense or the so-called sense of active touch also gives us an ordinal manifold of two, if not of three, dimensions. The differences appreciable in the different relative positions of the two limbs that meet in a joint, it is true, are not usually described as ordinal but as qualitative. But that classification seems to me to be certainly wrong. In the present connexion this sense is of interest only because its ordinal differences are not usually said to be spatial or localisational, but to be differences of position. Thus they form, in a manner, a companion to the pitch series and confirm the need for abstracting the ordinal variation from that of localisation for the purposes of the ultimate analysis and reconstruction of sense.

The study of the sensory attribute of order is, as I have variously tried to show, merely the foundation of an indefinite process of study by which the senses seem willing to be shuffled into a complete parallel with one another, and by which thereafter all the other cognitive functions seem likely to be much more intelligible than they have been hitherto. In the following pages I wish to give some account of these changes of outlook, especially towards the cognitive group. The former I have already pursued in considerable detail. But that thoroughness can be attained only for portions of the vast field in question and even then at best only in a temporarily adequate way. A sketch of portions of the field that are based on an inadequate survey can have value only as a rough guide or plan of approach. Some problems will doubtless withstand the effort to penetrate their obscurity, especially those of the qualitative differences of vision and still more of smell.[1]

The way in which the attribute of order brings the senses into conformity with one another may be illustrated by the case of hearing. The attributes are the result of the comparative analysis of the simplest elements or particles of sensation. Having brought these into a probable general agreement we should naturally expect to find that this agreement will extend to the simpler complexities of sensation. In the sense in which we are most keenly expert, namely, in vision, we find prominent a group of complexities of which

[1] A very interesting arrangement of smell qualities has recently been proposed by R. Henning.

distance is probably one of the simplest, other varieties being line, mass, surface, outline, and forms of all kinds. Another prominent group adds to all these the feature of motion. It is not difficult to state a general relation between these complexes and the variable attributes that appear in their parts. When we turn to hearing to seek a parallel to these, we must remember that we have established in uniaural hearing only a single dimension of pitch orders and that consequently all pitch forms and motions can be only of one dimension. In the transverse dimensions of auditory orders that the two ears mobilise for us we may similarly look for spatial forms and motions of only one dimension. And this is approximately all that the direct localisational capacity of binaural hearing affords.

The forms of pitch are found in the volumes of sounds (especially of tones) and in the intervals and chords of groups of tones. Their motions appear in the melodies of successive tones. The same fine sense of proportion that we find in ourselves for the proportions of visual distances and lines appears again in our familiar delicacy of discrimination of intervals—which are the proportions of auditory volumes (or pitch lines). It is of the greatest importance for the theoretical foundations of music that these things should be worked out in the finest detail. But it would be impossible to sketch them intelligently here.[1]

In the sense of vision a complication of the greatest importance appears which by a peculiar interlacing of two visual fields adds a third dimension to vision. This new dimension is not the result of any sort of cognitive correlation of the contributory fields; it is a sensory fact, as much visible as is either of the primary dimensions of a single field. This fact is really undeniable by anyone who has carefully considered the simpler aspects of stereoscopic vision. The attempt has often been made to bring the sense of solidity under the head of the products of "experience" by reference to some other source, especially to touch and muscular movement; but without success. The fact of stereoscopy, as it can be demonstrated so simply with the stereoscope, is much too "solid" to be thus explained away or to be converted into a by-product of the mere succession of any simpler (two-dimensional) forms.

The acceptance of this creative synthesis and its product must incline our judgment in the case of space, greatly in

[1] *Cf.* my two books on the subject, *The Psychology of Sound*, Cambridge, 1917, and *The Foundations of Music*, Cambridge, 1919.

favour of a similar process, although the product here is not by any means so obvious. But it seems clear, that space cannot be set down as an original or inherent feature of any one sense. The case of pitch-hearing compels us to admit as inherent in any sense only an ordinal field or system and to reserve space for a stage beyond even that of stereoscopy. In that further stage the different senses become correlated to one another. This probably happens in virtue of the similar forms and motions that appear in the different senses and their conjoint variations and displacements (a very complicated matter, of course). But the case of stereoscopic vision again warns us that we must not set this down as the result of cognitive correlation, *i.e.*, as a correlation through the medium of the identity or similarity of the conceptual schemes or ordinal systems that we bring forth from our intellect and attach to the presentations of the various senses, as far as they will fit them. We have no right thus to presuppose a conceptual intellect hovering over the turbulent chaos of sense and weaving it into a hierarchy of orders. It is out of the question that the intellect could create any typical synthesis of sense. This must in each case first appear, if the intellect (when *it* appears) is to set to work upon the former and to support and to enlarge it. However much evidence of conceptual correlation there may be in our advanced studies of the world of space, we can hardly doubt that space is a specially distinguished and unified system of orders to which all the relative ordinal dimensions of all the senses are attached.

The pitch dimension of sound alone stands outside the spatial system. But this one exception is brilliantly instructive. For it shows that the spatial system is so clear and distinct, and that all the senses are so vividly attached to it that we have previously entirely failed to grasp the variations of tonal pitch as an ordinal digression excluded from it and irrelevant to it. Even when the true character of pitch has been in some manner encountered, the first and prevailing inclination of most analysts has been to describe it as "quasi-spatial". On the other hand the systems of the senses, especially of vision, are so closely attached to a spatial system that each of them has often been thought to be equally and similarly spatial in its own degree of complexity. It has required a special motive like that of the exceptional nature of the tonal dimension to force us to abstract from stereoscopy the notion of spatiality and to recognise the binocular stereoscopic field as a merely tri-dimensional ordinal system, in which we encounter *forms* not spaces. In looking into this

system, we indeed seem to be looking into space. But it cannot be spatial originally. It becomes so only when all our senses and their systems become woven into one space. And this new system establishes itself so firmly that we find it quite hard to separate the original components of it from one another and to contemplate them singly and independently. It is only because the spatial inter-attachments of the senses are so vivid and cogent that so many theories have been propounded and accepted whereby one sense was supposed to bestow its special spatial favours upon others in which they were not native.

The tri-dimensional system of vision is so vast and detailed that it may often seem as if it were really the spatial system itself. We look over our visual field and we seem to look through space. But the doubts as to the primacy of distance-from-the-spectator in vision are an indication that men commonly seek for space some sort of background of resistance beyond the panorama of sight. Touch or resistance or movement from point to point seems to lend it substance. And yet none of these is by itself in any way superior. If we shut our eyes and move about, we feel that we shall only fully grasp the extent of our movements when we open our eyes and look. It seems clear in general that sensory space is not inherent in any or each of the sensory fields, but is a structure resting upon all of them at once so far as each is given at any moment, involving them all, and in turn supporting each. The minute study of the many processes that contribute to the elaboration of space must be a very extensive task. One of the hardest parts of it is the separation in ourselves of what is at any moment given of the spatial construct (*i.e.*, what of it is sensory) from what is potential, based it may be upon the dispositions of mere habit or, as in ourselves rather, upon conscious dispositions and expectations and upon conceptual constructs of an everyday kind.

Thus it will appear that we have to reckon not only with the various ordinal dimensions of each sense, *e.g.*, the three of vision, but also with the three dimensions of sensory space which are founded upon these and link them together, not to speak of the conceptual space or spaces that are constructed in cognition. Only, in these different spaces it is not a question of gathering them together from their foundations into one vast system of numerous dimensions, but of generating at each level a new system of three dimensions, in a new mental stuff, as it were. The two bi-dimensional visual fields form one tri-dimensional field; the various bi- or tri-

dimensional fields of the senses generate a single tri-dimensional sensory space, small as an actuality no doubt, but in ceaseless flow through its greater potentialities, which may be fixed by habit or memory. When conception supervenes, it generates a new and more perfect space that will incorporate all the succeeding and repeating actualities of sense. Each ordinal manifold, however, once it is formed and filled can be stated purely in its own terms; in fact, it cannot be stated otherwise, although for the justification of its contents we doubtless can and must look downwards to its springs in the data of sense.

At the same time it should be noticed that the earlier system does not seem to be taken up, and to disappear, into the later system that rests upon it. The earlier is still maintained *under* the later or more integrated one, as it were. Thus the ordinal systems of the two ears merge into one binaural field, which adds to the functions of either that of binaural localisation. But though we hear with two anatomical ears as if we had only one functional ear, yet we have good reason to believe that every ordinal element of either auditory field appears, and has its function, in the binaural field. There is nothing lost by such psychical integration. Similarly in binocular vision, we find a functional unity alongside the anatomical duplication of organs. Our vision has for this reason been called Cyclopean: we see with two eyes,—each of which, when motionless, is incapable of seeing the solidity of stationary bodies,—as if we had one eye midway between the actual two and capable of seeing solidity; as if we had one eye in the middle of the head with which we could see as well as men generally do with two. Now it is obvious that the visual field of the two eyes together is more extended than that of either eye separately, namely, by the amount of the field that is apprehended by each eye to the exclusion of the other. But only the central binocular part is functionally binocular, or capable of showing solidity. At the same time we are aware of the whole field as an apparent unity. Nevertheless it is a familiar fact that this binocular area is crowded with double images of the things we see, so crowded that on discovering this we are lost in wonder that we get any sort of coherent single vision from it at all. A little block of what we see is indeed single and solid; but a much greater part is not so. Only, we are interested exclusively in what is thus single and solid, and when our interest turns upon the doubled objects they become so rapidly single that we fail to notice they have ever been double. The important point in this is that at a certain

moment we turn our interest from a single solid object upon an object that until that moment was doubled in our vision and that our eyes respond so rapidly and correctly to this interest that they make it possible for us very rapidly to see the new object single and solid; so rapidly indeed that we remain unaware that it was ever doubled. Each eye moves correctly so as to catch its own particular image. And so we may infer that this image was there in its doubled psychical form although we did not know this. The psychical reality of double images is usually allowed by those who study this question. What is rarely, if ever, conceded, is that even in the single solid sights both contributory images are there psychically. But if the one point is admitted, so must be the other surely. When there is integration there is unity (single, solid); without integration there is duplication (double, flat). Where unity is patent, we cannot expect duplication (or disintegration) to be patent. But we may have good reason to believe that duplication may then occur in a latent form.

Similarly, space is a new system of orders that arises from the ordinal integration of the several senses. But these it does not obliterate or annul or diminish, as we are all perfectly well aware. And yet, it is so closely incorporated in the ordinal system of each sense, that we have been generally disposed to look upon these, not as merely enriched by the spatial integration, but as originally spatial. In this case we have reduced our concession of unity very greatly from that seemingly required in binocular vision. This change in our attitude can only be due to the clear differentiating effect of the qualitative distinctions of the systems that contribute towards the spatial integration. In the two eyes we usually find a very close parallelism of qualities, except in the case of lustre or of similar experiments in the binocular combination of different colours. And it is notorious how such different colours tend to break up the unity of vision and cause a rivalry of images. But it seems very clear that we must similarly admit that the ordinal fields of the various senses are not originally spatial, but merely ordinal in that limited sense in which the series of pitches is completely ordinal and yet not spatial. And the "stuff" of these different fields is originally different, however unitary the spatial field may finally appear to be to which they all become attached. In other words, the orders of the different sensory fields are conserved within their spatial integration.

2. A Possible Objection.

It is thus we must also approach the objection that may be raised to the admission of ordinal differences, namely, that these differences are perhaps always for the larger part latent or implicit, not explicit. A patch of colour can easily be so arranged that no points are separately visible in it at all. It will, of course, necessarily be distinct at the boundary of the patch, where it is surrounded by the rest of the field of vision, every part of which is always full of sensation. These boundaries are heightened in all cases by some form of contrast, whether of colour or of brightness. Within the patch lie all the orders of the many minimal points of colour that could be seen and differentiated under proper conditions, *e.g.*, when the patch is gradually reduced to disappearance at its various points. We may suppose, if we like, that every visual sensation, no matter how small, is still a mass or area of sensation, having some amount of extent, and that it is therefore rather a system of orders than a single order, even when minimal. But we must be careful not to allow mathematical notions to confuse the issue. It would doubtless be rash to speak of individual orders of the visual system in any absolute sense, as if their number could be counted. The number of just discriminable differences can be approximately estimated and in vision we might perhaps venture to put down the number of minimal particles of sight as the number of cones in the whole retina. It is doubtful whether such a procedure would serve any useful purpose. But it is important to observe the lowest limit in vision of a capacity to distinguish points from one another or to detect the displacement of a point under favourable circumstances. And there is no sense or sanction for conceiving of visual orders within or below the limits of this finest discrimination. Even if finer differences are implicit within the minimal mass, we cannot make these differences explicit, nor have we any indirect warrant for maintaining the existence of finer differences.

But within the larger patch of colour the contrary is true. We can make explicit all its latent differences and we have indirect sanctions besides. These are mainly of two kinds. In the first place the size of the patch is, in general and under similar conditions of convergence of the eyes, relative to the number of discriminable particles included in it. The greater the magnitudes that constitute the form of the patch, the larger the number of particles on which they are based. And the position of the patch in the field of vision depends upon the particular orders that make up the patch and their

absolute differentiæ as orders of the visual system. Two patches in different parts of the visual field may be of the same size, even though none of the ordinal components of the one appear in the other. And any patch always has a definite status in the visual field that marks it out as such from every other visual patch of equal size, or from any patch in the other field of vision.

The tendency to assume that what is implicit in sensation is non-existent there, is responsible for the prevailing failure to distinguish an attribute of order and for the tendency to assume that the intellect could by some sort of manipulations somehow work into an undifferentiated continuum differences that were not originally contained in it, or could bunch together into "signs" of loci (that are not given) qualitative and intensive differences that have themselves no ordinal differentiation. It has never been shown how such transformations could be brought about. It is just as arbitrary to suggest that the intellect could in any other manner either grade or arrange sensory extents so as to arrive at a notion of (mathematical) points,[1] or having drawn an ordinal system from its own deep well could apply this system to sensory material that itself is not ordinal. If you cannot get something out of nothing, neither can you give nothing body by dressing it up in the form of something. Wherever the ordinal systems of mathematics come from, it is clear that they can be applied to the stuff of sense only if that stuff itself contains ordinal differences both explicit and implicit. Then there is no difficulty whatever in the application in general. A serious problem arises only when we ask how the infinitely fine orders of mathematical thought are to be applied to the gross differences of sensory order with a profit that shall repay the labour. The disparity between the two makes one think one might as well set out to read a book with an oil immersion lens. The procedure would indeed be futile if the sense-data to which we suppose mathematics to be applied were merely the sense-data of a single soul as such, or were such data as pain (toothache or colic) or hunger or thirst. These have their place in space it is true, but they are the channels of practically no knowledge of the movements of any bodies in space. In touch and still more in

[1] "The manufacture of points from sense-data" devoid of positional character (*cf.* Mr. Russell's *Knowledge of the External World*, pp. 114 ff.) seems to me for this reason to be a vain effort. Without ordinal differences which are the only justification of this application, one might as well show how quills can be manufactured out of angels' wings or heather out of golden mountains.

vision, on the contrary, sense-data almost invariably enter fully into our spatial constructions and bear in themselves valuable data for knowledge of the positions and movements of bodies in space. This space is already larger than the actual sensory space of any one moment before the intellect begins to endeavour to apply its mathematical thought to it. And the knowledge mathematical thought then wishes to confirm and to extend is already significant knowledge of some degree of certainty about more or less permanent bodies, processes, or distances of (physical) space. By this means the rough data of sense, that seem so rough when we consider the narrow limits of the actual field of any sense at any moment, become relatively exceedingly fine in the vast space attained before the mathematical study of space and its contents begins. The roughness of the sense-data does not then diminish. But what was as sense-datum a mere speck in a small field of vision has become a mere speck in the heavens or on the earth many miles removed from its fellow. We may well long for a more microscopic eye, but no one of us would ever complain of the smallness of the world.

This point may perhaps be made somewhat clearer by a comparison of vision with hearing. The pitches of hearing are ordinal differences like those of vision, and we might just as reasonably apply mathematics to the former as to the latter. But no one would expect any profit from doing so. And the reason can only be this, that the pitches of hearing, as a matter of fact, stand in no real correlation with physical objects and with positions and movements in physical space. As far as physics is concerned, there is about as much profit in applying mathematics to sounds as to hungers or pains. In relation to music the procedure, primitive though its extent be, is of considerable value. But if it were the case that sounds like lights stood out in space in positions as definitely distinct as their pitches can be physically defined, our delicacy of pitch discrimination and its ordinal character would undoubtedly form a most important basis for knowledge of the physical world. But as they do not do so they are useless for that purpose.

It may seem to be a fatal weakness in this argument that space and some knowledge of its relations is supposed to be present before mathematics begins to work upon them. Surely we must first justify this space and our knowledge of it and for that justification mathematical constructions may seem to be an essential preliminary. If this implies that we somehow have the intellect and its methodology in the background from the beginning and that these somehow

allow themselves after careful scrutiny to be applied to the data of sense and to make them work, the view is surely mistaken. The intellect can make nothing work; it is not a transferable power. Not only that, but it must itself be an effect and not a source of determination. It rests upon the senses and it cannot justify out of itself the ground it stands on. It can certainly scrutinise the work of the senses and their integrations, and so bring its own reflection (or its knowledge) of them into complete conformity with them. In other words it can adjust itself more and more perfectly to the senses, as it does to the world in general. It grows more and more orderly by allowing the orderly determinations that proceed from the world and the senses to permeate it more and more thoroughly. But it can do nothing towards forming or initiating the operations of these integrations themselves.

It is for this reason that mathematical thought can only get to work on the data of sense after these have themselves been highly elaborated and already signify space, its contents and their relations. The work of epistemology must be more a process of learning exactly the ground knowledge stands upon than of justifying that ground. If it justifies itself, it can only do so in the sense of knowing its own *de facto* basis and of *being* itself more actively or fully (*i.e.*, more correct). Kant's point of view is here generally valid. You cannot bring space from anywhere and apply it to the data of sense. For you have nowhere to bring it from, and if you seem to bring it, you deceive yourself; for it was already there all the time, as an accomplished fact. Nor can you elaborate space out of non-spatial sense-data by some higher mental process ("experience" or thought). You must simply admit its presence as a feature of the sensory world. This attitude is valid not only for space, but for any other special synthesis or "form" of experience in general.

3. The New Outlook Provided by the Attribute.

Having thus shown the necessity of admitting the presence in sense-data of an attribute of systemic order and having brought the simpler complexities of sense into connexion with the attribute in a way that seems not only correct and profitable as far as it goes, but also gives some prospect of being in time brought to completion, we may now proceed to indicate what further services towards the elucidation of experience may be expected from this attribute and the scheme of integration it suggests.

One of the first is an understanding of the general problem

of cognition itself. What is cognition? Explain to us what it is to know. That has always seemed to be an impossible task because there is surely nothing in the world like knowledge. It is *sui generis*. Who shall show us its fellow? This may well seem a hopeless question. But without some positive answer to it, how could there be any semblance of a science embracing and explaining knowledge. Over against a perfectly unique thing science would be powerless; for science must generalise, if it is to succeed. And it can do so, only by the grouping of like objects or by the orderly arrangement of similar ones. Thus we can hope to explain knowledge only if we can give it a place in the system of experience, whereby it will be seen to occupy a definite position in that system alongside other forms of experience that will then for the first time reveal their similarity to it.

Now the only attributes of sense-data that seem to attain more than a mere trace of complication are the ordinal ones, and of these systemic order seems to go much farther than does temporal order. The latter attains only the simple degree of complication, namely, that of simple forms such as time intervals and rhythms. The interaction of time intervals with one another shows traces of the illusions that are so familiar in systemic forms, especially in the sense of vision. But there can be no doubt that the systemic attribute reaches a higher grade of integration. Stereoscopy is undoubtedly based ultimately upon this attribute, through the intermediate complication of simple forms, of which each single eye is capable. Under conditions of motionlessness of both the eye and its objects, only the integration of these simple forms from both eyes at once will yield stereoscopy. Moreover, there can be no reasonable doubt that the proximate basis of sensory space is the forms that appear in the different senses owing to the common stimulation by physical objects. No one would suggest that thought is an efflux of time and its forms. Nor has it anything to do with the qualities or intensities of sense. And yet it is clearly based upon sense. That has been a prevalent belief in all ages of philosophy. Though the forms of the understanding may be *a priori*, yet they are filled and determined by the changes of sense—without a doubt. And now we begin to suspect that the forms of understanding are *a priori*, only in the sense that they are general or typical while their determinations through sense are particular; but that both these forms in general and their particular shapes are brought about in one and the same process. Sense is the basis of intellect, building it and filling it in identical operations.

If this be so, then the only basis in sense to which we may hopefully ascribe the functions of cognition is the systemic ordinal attribute and its line of integration. Cognition would thus be its outgrowth or integrate.

Much, of course, if not all, has still to be done before such a conclusion could be said to have been established with all the vigour of scientific scrutiny. We should require to make a microscopic examination of many instances of thought processes. We should have to establish the ordinal nature of thought by the widest possible survey of its forms and by study and inferences from its relations to other experiences and even to the body.[1] This would be a task requiring the fullest and most detailed experimental studies. Mere introspective observation is not enough, although that would have to be procured in its finest forms. A great deal of inductive arrangement and inferential approximation would have to be done before the statement of the case could be held to be satisfactorily attained. We should have to learn to pin cognition on to its basis properly, as in organic chemistry the highly complex compounds are gradually analysed and placed correctly in the hierarchy of compounds.

It is only by such procedure as this that we can hope to bring sense and cognition into perfect continuity and so to discover their common root. Not that this root is precisely common to both, as if each were a stem bearing its own branches and leaves. It is more probable that sense is the root of intellect, drawing its food of specific determinations from the physical world and at the same time building up from that nourishment a stem and branches finally bearing in the intellect a vast wealth of leaves, blossoms, and seed.

If we can hope by such means to give some explanation of cognition, we may also aspire to an understanding of the mysteries of recognition and memory. The obscurity and wonderment of these has always been felt to lie in the consciousness of renewal, of again-ness, that attaches to them. It seems an impossible task to explain how we can become conscious that a present experience has been ours before. But the practical needs of recognition are served not so much by a consciousness of repetition, though that may be in some respects a more striking experience, but by the knowledge that an experience that we have for the first time is new to us. And that can be explained easily enough if we suppose that both in the complex mental life of man and in animal life that is characterised rather by habits, effects are produced

[1] For the style of argument I may refer to my discussion of the ordinal nature of pitch.

by a first-time experience that are at least as important, if not more important, than the effects produced by its repetition. These effects are forms of excitement on the animal level and forms of conceptual awareness in the human. We ourselves certainly share in both kinds and we may often cognitively infer from excitement to recognition (as a conceptual idea) or our recognition may often be an immediate knowledge of conceptual wholes to which the experience in question belongs. If we already possess a cognitive structure and a (new) part is now added to it, we shall hardly fail to pass reflexions on this addition, noting its date, its cause, its significance, etc. When the extended whole or the part by which it was extended recurs, the basis of recognition has not then for the first time to be won, but merely to be used, having been provided in the first occurrence. If recognition takes place at a level below cognition proper, say at perception of particulars, then upon the first formation of the perception, not only will the perception form an item in some ordinal scheme, for example of spatial position or temporal sequence or habit series, but it will then form attachments with its neighbours, attachments, it may be, of association between perceptions or between muscular expressions. On renewal these associations will be revived in their degree of strength and will carry the mind forwards in a way impossible in the first instance.

It is, however, a fact familiar to all who have approached the subject in detail or experimentally, that the distinction of the various forms of recognition has not yet been fully carried out nor has their exact status in the scheme of experience been determined. I do not wish to prejudge the outcome of these studies in any way. The point I wish to emphasise is that the conception of an ordinal system rooted in the data of sense and of the various ordinal systems raised upon that basis by successive integrations seems able to remove from the notion of recognition the hopeless mystery that has been one of its most striking features.

The same applies to memory. In memory we come face to face with another striking characteristic of cognition, its special power of association, by means of which the little surface (as it were) of the conceptual contents of the mind at any moment is held in its place as a part of an indefinitely larger area in which we can move about by the bonds of association with an indefinitely great freedom. The relation of the brain to the faculty of memory is a special problem of psycho-physics. Psychology is concerned primarily with the determination of the exact place of memory in the

whole scheme of experience, with its explanation in virtue of that position, with its springs in the actual cognitive contents of any moment, and with the precise description of the manner in which these contents change progressively from moment to moment in the process of remembering. The problem of the unconscious, of the mode of being of memories when they are not actually revived, appears at this point; but I do not think that it necessarily enters into the discussion of the preceding questions. It is a special question, which we hardly seem likely at present to further by discussion.

4. Relation to Psycho-physics.

If the course of experimental psychology and its approximative theoretical interpretation bears out these suggestions, we should at last have an hypothesis upon which all the work of psychology could be concentrated. Even in the present fragmentary state of our knowledge of detail the idea promises to dispel a great deal of the mystery attaching to the mind and its various faculties and their connexions. That is a great merit and would alone suffice to give the idea some value of probability. Even if the indications I have made are not borne out in detail, we may at least expect the successful interpretation of the cognitive functions of the mind to take on a form similar to that suggested.

It is a general principle of the elucidation of the greater systems of reality that the higher or more complex or more inclusive shall be founded upon the lower or simple or more restricted, and that the features of the former shall be shown to run into or to underlie those of the latter. Thus the heavens have become other worlds, in all general characteristics greatly resembling the earth we live on; the complex substances found in plants and animal bodies are members of the groups of elements and their combinations of which the physical world consists; the higher animals are the later products of an evolution sustaining and moulding all animal life. Even heaven itself, to the modern mind that is so rightly impressed with the methods and principles that have proved successful in the science of the last two or three centuries, must be fashioned from the dust of our present imperfect life. Not new material is required, but only a better spirit to inform the whole. The study of the mind from its foundations in sense seems only to confirm this general trend of thought. The high functions of intellect are rooted in the fragments of sense.

We may express this otherwise by saying that the intellect is a natural outgrowth of the world as it is represented in sense. It is not a visitant from another sphere, somehow

attaching itself to the world of sense with which it has no inner kinship and looking through and beyond sense to the real world. It is this primary admission of estrangement that accounts for the seemingly insuperable difficulty of justifying the assumptions that the intellect makes regarding a real world "beyond" the senses. Naturally until the inner bonds of cognition and sense have been discovered there can be nothing but seeming arbitrariness in these interpretations. The gift seems beyond the powers of the giver to bestow and we feel unhappy in doubting its honesty. By what privilege does the intellect stand in the background, and evidently secure in the unquestioned strength of its own faculties, submit all the complications of sense to its own particular canons and measures? What right has it to criticise? Is there more light and power in its decisions of right and wrong than in the interactions characteristic of experiences of lower levels, *e.g.*, in the harmonies and discords of sound, in the agreements and disagreements of colours with one another, in the oppositions and enhancements of pleasures and displeasures? By what right is it a judge in the discipline called epistemology? Surely it is clear that there must be in all levels of experiences an aspect akin to that which we know in cognition as truth and error. The latter cannot be a fundamentally new thing. If so, then all these aspects at their respective stages have equal and similar functions and the intellect can no more criticise and regulate them than it can discover itself over again or establish its own validity by argument. The intellect can only adjust itself to them so as to portray them in its own way—correctly. But it cannot justify them any more than man can convert himself into a mouse.

On the contrary, far from being a stranger to sense, intellect must be its offspring and, after the strange fashion of much of this world of ours, at the same time its strength and support, binding it into a strong coherent whole. Intellect is merely one level of the world's own order, bound to the latter by penetrating ties and in constant interaction with it: its child and partner at once. The mystery of mind lies not so much in the forms of intellect, but in the qualities of sense, such as the smells and the colours, and the single qualitative differences of the other senses. But it may be that these are strange to us merely because they do not combine and complicate into higher levels as do the ordinal aspects of sense. Quality is a whisper to us of worlds we can only guess at. But the repeating integrations of systemic order have made us much at home in the world, so that our intellectual gaze seems to penetrate its greatest depths. Our minds mirror

the world in its order. Mind is in so far a mere extension of the order of the physical universe, a part of it in that respect. The currents of the world penetrate it and run through it without loss of their detail of differences. It is true we can never feel the warmth of the world's being, its inner light and essence, the springs of its spontaneity. But we can feel and know almost its every part and movement and the principles of its changes. And if we fail not to grant it the life and spirit that we feel in ourselves, it cannot be such a wilderness of stocks and stones as many despondently believe who miss in it the rich qualities that we find in sense.

With this in view we can begin to understand how it is that the brain thinks the world, as it were. The brain is a vast structure, but it is at least clearly a whole of parts. The senses enter by different portals and are housed in different regions of it. Each of them is in the first place an intimate system with its own range of simple complications. It is a patent fact that these systems come into close correlation with one another. It is not necessary to think of this, as has perhaps been the prevailing tendency, as an association of images; it is just as likely to be the sort of correlation above ascribed to sensory space, before it is an association of images. Beyond these general indications it has as yet been impossible to carry the interpretation of brain in terms of mind.

But if cognition is prevailingly ordinal in character and is an outgrowth of the complications of the ordinal attribute of sense, there can be no difficulty in carrying on the idea of progressive correlation of brain "centres" upwards or inwards to the hypostatisation of a cerebral substitute for thought itself. It is true we do not know the location of this in the brain, nor are we perhaps likely to learn much about it soon. But it may well be accepted as a general notion for the interpretation of the brain as the organ of mind. The points of the brain at which occur the combinative groupings of groupings that finally reach to the elements of sense will be the cerebral correlatives of the thoughts whose mental function is a similar grouping of groupings of sense-data.

In the brain substrate of the qualities of sense we have probably the highest possible development of the (chemical?) specialisations of neural matter, especially in vision, smell and taste, and hearing. In the other senses there is more homogeneity, though they doubtless differ somewhat from one another. The neural correlate of ordinal differences and their integrative complications and finally of thoughts may well be a still more primitive and generalised process. We can hardly tell. But at least it should be no longer difficult to think of the brain as the organ of the cognitive mind.

II.—MOTIVES IN THE LIGHT OF RECENT DISCUSSION.[1]

By W. McDougall.

There are still, I suppose, psychologists who believe that pleasure and pain, either experienced or anticipated, are the moving powers of all human activity; and others who adhere to the ideo-motor theory of action of the intellectualists, based on the principle that every idea is a tendency to action. Others again seem to feel no need for any theory of action and are content to regard all human activity as merely chains of complicated mechanical reflexes. It is common to all who accept any one of these views that they do not recognise innate conative tendencies, or, if they recognise them at all, regard them as playing a very minor part in human life. To any such who may be present I must offer apologies for inflicting this paper upon them; for all that I have to say must seem to them meaningless and absurd.

My discussion starts from the assumption that the innate constitution of the human species comprises an array of conative dispositions and that these play a great part in human life, whether we call them instincts, or (with Mr. Shand) emotional dispositions, or merely conative tendencies. In my *Social Psychology* I argued that these native tendencies are the mainsprings of all man's activity, and that, in order to explain or understand any particular form of thought or conduct, we have to show that it is prompted and sustained by one or more of these native tendencies; that, in short, these are the moving powers or *motives* of all man's activities. Several psychologists have accepted my account of these native tendencies as in the main correct, but some of them, while admitting that they play a great part in determining the forms of man's conduct, propose to supplement them by recognising other springs of thought and action of a different nature. I wish to examine some of these proposals and to inquire how far they are well founded.

[1] A paper read before the British Psychological Society on 13th March, 1920.

In the first place I would point out that the onus of proof lies with those who make these proposals. My sketch claims to provide a basis of explanation for all conduct; and those who, while accepting it as substantially true, wish to supplement it by admitting other principles of action must show that it is in principle inadequate.

Prof. Woodworth has raised in the most definite form the question I wish to examine, in his *Dynamic Psychology* (published in 1918). In that book he accepts my account of the instincts as substantially and in principle correct, or at least as being drawn on the right lines, no matter how much it may require modification in detail. He agrees that the instincts furnish the motives of much human activity, even on the higher intellectual and moral plane. But he maintains that there are other motive forces in the mind. He makes use of two terms which are very useful and which I adopt for the purpose of this discussion. Likening the organism to a machine, without thereby meaning to commit himself to a mechanistic view of human nature, he points out that, just as in a machine we may distinguish the structural apparatus from the motive power which activates or drives it, so in the organism or the mind, we may distinguish structure from the activating forces; and he speaks of the former as 'mechanism' and of the latter as 'drives'. He raises the question—Does all 'drive' come from the instincts, or are there other kinds of 'drive,' other sources of driving power? To this question his reply is affirmative. He maintains that all 'mechanisms,' whether innate or acquired, contain their own driving power, and, therefore, are not wholly dependent upon 'drive' coming from the instincts. The difference between his view and mine may perhaps be illustrated by carrying further the mechanical analogy and likening the organism to a factory full of varied machinery. According to my view, all the various machines are driven by power transmitted from a central power-station where the current from the electric mains enters the factory and is converted into mechanical power. According to Prof. Woodworth's view, the factory has these central and most powerful dynamos; but, in addition, every machine has its own supplementary dynamo in which 'drive' is generated, though this may be, and often is, augmented by drive supplied from the central power-house.

Woodworth recognises supplementary drives of two orders, resident respectively in native mechanisms and in acquired mechanisms. He points to various native capacities such as those for music, for mathematics, for languages. Referring

to such natural talents, he writes: "If we inquire whether McDougall could be induced to include what we have called native capacities in his list of instincts, we readily assure ourselves that he would not. To include them would lie quite outside of his scheme. They belong rather with those intellectual processes which he asserts to be the servants of the instinctive impulses, to be, in short, mechanisms requiring drive, and not by any means drives themselves. This is the chief point at which the present discussion takes issue with McDougall—indeed, disagreement on this point is the chief element of contention in this whole book. The great aim of the book is, that is to say, to attempt to show that any mechanism—except perhaps some of the most rudimentary that give the simple reflexes—once it is aroused, is capable of furnishing its own drive and also of lending drive to other connected mechanisms." "The question is, whether the mechanisms for the thousand and one things which the human individual has the capacity to do are themselves wholly passive, requiring the drive of these few instincts, or whether each such mechanism can be directly aroused and continue in action without assistance from hunger, sex, self-assertion, curiosity, and the rest" (p. 66). He then develops his argument as follows: "It must be admitted that sometimes the instincts furnish drive for other mechanisms. With respect to activities of the more intellectual sort, drive comes especially from such instincts as those of self-assertion, curiosity and construction. The child can be spurred on to industry in his studies by appealing to his self-feeling. . . . Similarly, his curiosity or his natural impulse to manipulate and make things can be played upon in the interests of getting him to accomplish some task. This is true, and yet it is also true that such motives are likely not to carry the child very far in a line where he finds nothing intrinsically interesting to himself. For example, a child may be induced by such means to make a start in learning to sing, but, unless he has a natural musical gift, he drops out soon . . . whereas the musical child, once started by the appeal to his self-feeling, is carried along by zeal for music itself, and puts forth great energy without requiring such extraneous stimuli to be constantly applied." He then insists on the reality of innate specialised capacities and goes on to say: "The only question that could possibly be raised is as to whether these capacities are anything more than mechanisms. It might perhaps be the case that general factors, such as curiosity, furnished all the drive, but that this drive had most result where it found good

mechanisms. According to such a view, the industry displayed by a certain child in number work would be derived from curiosity, self-assertion, or other general motives that were aroused, his success being due to his possession of extra good mechanisms for dealing with numbers; while the industry of another child in music would be due to the general motives of self-assertion, constructiveness, etc., and the special direction taken by the resulting activity would be due to good mechanisms for appreciating and performing music." This view he rejects on the following grounds. It will not, he says, account for the subject's absorption and interest in such activities, without which little is achieved. "As a general proposition, we may say that the drive that carries forward any activity, when it is running freely and effectively, is inherent in that activity. It is only when an activity is running by its own drive that it can run thus freely and effectively; for as long as it is being driven by some extrinsic motive, it is subject to the distraction of that motive." He points out truly enough that self-consciousness is apt to interfere with the excellence of a public performance, and adds: "It is not true, then, that the motive that initiates a given activity furnishes the motive force for the whole activity; it simply leads the performer up to the act, but the motive force for the act must be inherent. In short, you simply must take as your immediate aim the accomplishment of the particular act before you. If you are to accomplish a given result, you must aim at that result, and, for the moment, must get interested in that result for its own sake. You will never get anywhere in the particular activity by virtue of your general tendencies. This is notably true of continued and complex systems of activity, such as most human activities become. Unless you get up an interest in a system of activities you can accomplish nothing in it. Extraneous motives may bring you to the door of a system of activities, but, once inside, you must drop everything extraneous. McDougall's principle, therefore, that the original impulse or conation supplies the motive power to all the activities that are but means to the attainment of the desired end, would make a very bad guide in education or in any attempt to control and influence the behaviour of men" (p. 71). In support of this he urges: "What a dull world, after all, it would be if things had no interest in themselves but only as they appealed to some one of the primary instincts or a derivative from them". Then he asserts that "human interests keep pace with human capacities. Almost always, where a child displays talent, he also displays interest." And

he makes the following interesting suggestion: "It might not be amiss to extend McDougall's conception of the connection of instincts and emotions so as to speak of a native interest as the affective side of a native capacity. Along with the capacity for music goes the musical interest; along with the capacity for handling numerical relations goes an interest in numbers; along with the capacity for mechanical devices goes the interest in mechanics; along with the capacity for language goes the interest in learning to speak; and so on through the list of capacities both those that are generally present in all men and those that are strong only in the exceptional individual. From the introspective side, an interest is somewhat similar to an emotion; from the side of behaviour, it is a drive towards activity of the capacity to which it is attached." He concludes his argument on native capacities by saying: "The system of native human motives is thus much broader and more adequate to the specialisation of human behaviour than McDougall's conception would allow. It is especially the *objective* interests that are thus provided for—the interest in colour, form, tone, number, spatial arrangement, mechanical effect, plants and animals and human beings. It is not so much the intellectual activities in the abstract—reasoning, imagination, memory, and the rest—that interest us, as the different classes of object that appeal to our natural capacities. The world is interesting, not simply because it affords us food and shelter and stimuli for all our primal instincts, but because we contain within ourselves adaptations to many of its objective characteristics and are easily aroused to interesting and satisfying activity in dealing with these characteristics. The field of human motives is as broad as the world that man can deal with and understand."

Prof. Woodworth then goes on to develop the same thesis in respect to acquired capacities. He gives an excellent account of the process of acquiring such capacities as typewriting and other complex motor facilities. Then he writes: "Learned equipment, so far as indicated above, consists in new 'mechanisms'; and the question remains whether there is any similar development by the individual of new 'drives'". In accordance with his general principle, that every mechanism is also a 'drive,' he answers this question in the affirmative and concludes as follows: "In short, the power of acquiring new mechanisms possessed by the human mind is at the same time a power of acquiring new drives; for every mechanism, when at that stage of its development when it has reached a degree of effectiveness *without having*

yet become entirely automatic is itself a drive and capable of motivating activities that lie beyond its immediate scope" (p. 104). I have quoted Prof. Woodworth's words at some length, because I wish to do full justice to his position, and I do not think that I have omitted to put before you any essential part of his argument. I admit that there is much that is attractive in his position, and I agree with all that he says of the reality and variety of the specialised native capacities. In fact, I believe, that in my own published works (especially in my *Psychology, the Study of Behaviour*) I have gone beyond him in recognising the complexity of the innate 'mechanisms' of the human mind. But I feel that his argument is entirely unconvincing, and it seems to me to contain admissions that are fatal to it. Let me deal first with the acquired capacities. In my *Social Psychology* I wrote, "Are, then, these instinctive impulses the only motive powers of the human mind to thought and action?" I answered this question as follows: "In the developed human mind there are springs of action of another class, namely, acquired habits of thought and action. An acquired mode of activity becomes by repetition habitual, and the more frequently it is repeated the more powerful becomes the habit as a source of impulse or motive power. Few habits can equal in this respect the principal instincts; and habits are in a sense derived from, and secondary to, instincts. . . . Habits are formed only in the service of the instincts" (p. 43). I thus admitted and stated the case which Prof. Woodworth has made his own, so far as acquired habits are concerned. But Woodworth's extension of the principle to all special capacities, both native and acquired, has led me to re-examine the problem of 'drives' in connection with motor habits, about which I had long felt some uneasiness. It may be that I am the victim of contra-suggestibility; for this re-examination leads me to doubt whether even motor habits of the most pronounced kind contain any intrinsic 'drive'. The most deeply rooted motor habit that I can discover in myself is perhaps the repetition of the alphabet with a particular rhythm which I learnt as a young child. Now, if I launch myself on the repetition of the alphabet, and if I check myself in mid-career, I do experience a sense of dissatisfaction and incompleteness, a vague unsatisfied tendency to complete the process, which might be taken as evidence of the intrinsic drive of this habit. But I submit that it can be otherwise explained. First, the rhythm has a certain form or scheme which is vaguely present to my consciousness as a whole when I set out to repeat the alphabet, and the failure

explicitly to fill out, to realise, this scheme leaves a sense of incompleteness. But this again depends upon the original purpose of repeating the whole alphabet. It has frequently happened to me that I found myself uncertain of the order of sequence of some letters of the alphabet, more especially of the letters I, J, K, L, as, for example, in using a dictionary. My practice on such occasions is to repeat the alphabet from the beginning with the habitual rhythm, until I come to the required letter. When I have reached this letter, my purpose is attained, and I experience no tendency to run on further, no sense of incompleteness or dissatisfaction. That is to say, this very old and well-established motor habit seems to have no intrinsic 'drive,' but seems to depend for its 'drive' wholly upon the purpose of the moment, a drive entirely extrinsic to itself.

I arrive at the same result when I examine my performance of any other habitual action. And I challenge Prof. Woodworth and all of you to examine your motor facilities critically from the point of view of this question. I think you will be led to share my conclusion that the motor habit contains no intrinsic drive; it determines *how* we shall execute our purposes, but does not prompt and sustain the doing. There is a class of trivial habits, of which twirling the moustache may stand as the type. At first sight they may seem to be operated by intrinsic drives; but if you will consider any such habit carefully, I think you will see that, just as it was originally acquired in the service of some extrinsic purpose or motive, so now it operates only as a part of some larger complex activity that has some underlying motive, say, in the case of the twirling of the moustache, embarrassment, vanity, self-display; it has become a channel through which some such impulse finds a ready outlet.

Woodworth, in asserting that every acquired mechanism is itself a drive, makes a fatal but necessary reservation—namely, provided that it has 'not yet become entirely automatic' (p. 104). He admits then, that when the habit is perfected, when it has become automatic, it ceases to be or to have any 'drive'. Is not this admission fatal to his whole contention? If the habit becomes a drive, acquires impulsive power, simply through repetition, why should further repetition and perfection of it as mechanism, reduce it from the position of being also a drive? Why should this deprive it of impulsive power and reduce it to the position of mere mechanism? Woodworth suggests no explanation, and I do not think that any can be suggested. Woodworth himself has pointed out the fact that we are apt to lose interest in practising a skilled

movement as soon as we have completely mastered all its difficulties (p. 102). This is another fatal admission. He writes: "Action that is too easy because all difficulties have been smoothed away or already subjugated by well-formed habits is automatic rather than interesting, and action that meets with unsurmountable obstacles is distinctly annoying; but action that encounters resistance but overcomes it without resorting to the last ounce of effort is distinctly interesting" (p. 102). Very true! He adds: "Those who, like McDougall, attempt to trace all motive force to the instincts, would regard such acts as driven by the native impulses of curiosity and manipulation" (p. 103). But that is not quite correct. I should assign these impulses to the persistent manipulations of a monkey; but, in the case of a boy or man, I should invoke the great impulse of self-assertion as the usual prime mover and sustainer of such persistent effort to acquire skill. And the reason that such a process ceases to be interesting as soon as complete mastery is achieved is simply that then the purpose is achieved, the impulse, the desire has attained its end. Of course such skill may become interesting again from a different motive; it may be used in the service of self-display, as when the boy who has mastered some feat of sleight of hand displays his dexterity to an admiring audience; or again it may be utilised in the service of economic or other motives.

If then Woodworth's principle breaks down in this case of acquired facilities, if these on careful consideration stand revealed as mere mechanisms devoid of all intrinsic 'drive,' is it not probable that the same is true of more complex capacities, even of those innate capacities, whose nature is most obscure, but which are perhaps the best examples of mechanisms that seem also to be drives?

Let us consider some highly complex capacities which are no doubt partly native, partly acquired. Here also Woodworth makes a fatal admission. He writes, "*Almost* always, where a child displays talent, he also displays interest" (p. 74). Here the fatal word is 'almost'. If Woodworth could have truthfully left out that little word *almost*, his argument would have been strong, though not conclusive. But the necessity of using the word 'almost' to qualify the statement is, I say, a fatal admission. If Woodworth's doctrine were true, then, in proportion as talent or capacity is strong and in proportion as it is developed and specialised by use, its exercise should always, without exception, be the more interesting and should furnish a stronger 'drive' for its own exercise. But what do we find? Do we not all know instances of men who have by long years of labour acquired skill and proficiency in some

calling, say bank-clerking, accountancy, dentistry or medicine, and who, as soon as they have amassed or otherwise acquired a competency which will enable them to live modestly without the exercise of their highly specialised and developed capacity, lay down their tools with a sigh of relief, and spend their remaining years in a vain struggle to acquire proficiency in golf or angling or gardening? In many such cases we see how capacity, rooted in nature and built up by long exercise, fails to show any evidence of having any intrinsic interest or driving power. I cannot myself point to any striking instance of a musician or a mathematician who has behaved in this way, but I have little doubt that such instances could be found. I call to mind, however, a distinguished surgeon who retired from his London practice at the height of his career and was to be seen in after years driving his team of sturdy farm horses, his legs dangling happily from the shaft of the waggon

The strongest instances that can be adduced in support of Woodworth's thesis are the men of genius who, like Mozart or Lord Kelvin, take to music or mathematics as a duck to the water. We can only judge of such cases by what we can learn of humbler examples of similar kinds. Do any of the children that we can observe closely and who develop special talent in music, mathematics, drawing or football, seem to exercise these talents independently of all extrinsic motives? They enjoy their exercises no doubt; they may work at them to the point of exhaustion; they become absorbed in them. But are there not always extrinsic motives at work—ambition, vanity, the desire to excel, emulation, the desire to please their parents or teachers, the desire to understand, the desire to fit themselves for a career, the desire to overcome difficulties, the vague desire to give expression to various emotions? All or some of these and other similar motives are commonly at work sustaining their efforts, and renewing them after moments of discouragement. And are there not talented but lazy children who are the despair of their teachers, and who never develop their talents, or only do so when they begin to feel the spur of the economic motive? A further objection to the view that such a native capacity as a talent for music is a 'mechanism' which contains an intrinsic 'drive' is the fact that any such talent is unquestionably complex, it depends upon superiority in a number of more elementary functions, though it is difficult to effect the analysis of any particular example. Thus musical talent implies superiority in such functions as tone-discrimination, appreciation of rhythm, of time, of tone relations. It is the happy

conjunction of native excellence in these and other functions that constitutes musical talent. But can we suppose that such a function as tone-discrimination depends on a 'mechanism' that has an intrinsic drive? Do we ever find anyone absorbed in the exercise of such a function for its own sake? Is it not always in the service of some extrinsic purpose that it is exercised? Or consider such a natural endowment as an exceptionally vivid and accurate visual memory. Is it not only when its possessor begins to understand that this is an instrument which he can make use of in the service of various extrinsic purposes that he begins deliberately to exercise it? I see, then, no good evidence in support of Woodworth's view that every mechanism contains its own drive, even in the facts of those most specialised native capacities which are the most favourable to his view. And I see serious difficulties in the way of any such view.

Let me invite your consideration of a problem in motives which is occupying me at this time. In my garden is the root of a huge ash tree which was cut down many years ago. Being much exercised by the fuel problem this winter, I cast my eye upon this root, reflecting that, if it were extracted and cut up, it would make about a ton of excellent fuel, worth at current rates about 50s. But I knew also that to extract it and cut it up would be a very severe piece of labour. No man in his senses would undertake it for a wage of 50s. Nor did I feel strongly attracted to the task. However, I reflected that, if I could interest one or more of my boys in the task, it would provide us with healthy outdoor occupation and secure me the pleasure of their companionship. My own motives, then, seemed clear. But how to inspire a schoolboy of many and varied interests with enthusiasm for this giant task? That was a serious problem. I opened the campaign in the Christmas holidays by a few remarks on our need of wood and the mass of it contained in that old root. They knew at once what I was after, and retorted, 'Why don't you buy another load?' They distinctly shied at the implied proposition. The economic motive showed no signs of life, and I would not bribe them with money. What other motives could I appeal to or hope to stir up? Even President Stanley Hall, I think, has not identified a special capacity for digging up the roots of immense trees as part of man's native inheritance from his savage ancestors. However, by putting on them a little personal pressure, that is, showing them that I strongly desired their help, I made a start, and in the course of several afternoons opened a ditch round about the object of my attack. But the work flagged;

the boys worked only to please me; and I foresaw that there would be little satisfaction to me or to them, so long as they worked from this motive only. So I dug a little deeper myself, and began to expose some of the curling giant roots. Then the youngest boy (of 11 years) began to display an interest in them; it was, I think, partly curiosity, a desire to see them more fully and to trace out their ramifications, partly a zest in using an axe upon them and actually detaching pieces that could be transferred to the fuel house. The accomplishment of the work no longer seemed so remote and improbable. Then we came upon a mass of brickbats among the tangled roots. They added to our difficulties, but they gave a touch of archæological interest. Who put them there? What else might we find buried so safely for a hundred years or more? Then we bored two deep holes in the wood in preparation for a charge of blasting powder, and began to look forward to a glorious explosion. But the main buttresses must be got away before the blasting, or we could not hope to shatter it effectively. And so we hacked away with axes and saws and forks and wedges and spades. By this time my boy was grown keener than myself. As soon as he comes home from school he sets to work by himself and spends many hours of most vigorous effort in digging and chopping and scraping, and often he asks—'When are you coming out to have another go at the old root?' By this time we both regard the monster with an alternation of hatred and of affection, respect, and admiration. For it baffles us so frequently and in such ingenious ways. We think we are on the point of getting off a chunk, and we find the old monster is holding it fast below; and we have to struggle and strive and exert all our ingenuity to overcome our new difficulties. By this time the chief motive at work in both of us may, I think, be indicated by the phrase, "We won't be beaten by the old beast". Every chunk we get off is an occasion of joyous triumph, and every new root we uncover is a fresh challenge to our ingenuity and determination. If one of us succeeds in getting off a piece in the absence of the other, it is exhibited on his return with mutual satisfaction. My little son greatly regretted that anything so stupid as a psychological discussion should cause me to waste this fine Saturday afternoon, which might have been devoted to our great work; and I have very little doubt that at this moment he is battling vigorously with some newly discovered difficulty. Further, I am confident that his keenness will endure to the end; and I know that, when we two sit before the fire locked in the fierce delights of chess, on some bitter

evening of an English April, we shall enjoy the glowing warmth sent out by the fragments of our old friend and enemy far more than if we had merely bought another load of logs.

Here, then, is a case of absorption in a task, of sustained keenness and even enthusiasm for it, a task of extreme strenuousness in the service of which we suffer many pains, lose many bits of skin from our knuckles, strain our muscles to the utmost, and deeply wrinkle our brows. And the motives of this activity are all extrinsic; there is no question of the exercise of any specialised native capacity, nor of any acquired special capacity. The work is all of the roughest, most unspecialised kind, involving varied and non-habitual movements; yet we pursue it with an ardour worthy of a great cause; and, though my motives are no doubt somewhat sophisticated and complex, my boys are simple and direct, and, though extrinsic, very efficient.[1]

It would be difficult to find an instance better suited to serve as a problem in motives; and if Prof. Woodworth or any one here will show that the activities I have described are maintained by intrinsic motives, he will go far to convince me of my general error. In order to be explicit, I will add that my boy's activity seems to be an instance of unformulated volition of a not uncommon kind. In it the great impulse of self-assertion plays a principal part as energiser of the whole process. Without understanding how or why he has become involved in this arduous task, without having clearly defined his end, and without strongly desiring the end for its own sake, he yet strives keenly towards this end, because he has begun the task and refuses to be beaten; and every effort and especially every step of progress towards the end confirms this set of the will; so that, even if the end should cease to be in itself desirable, it would not be easy to change our purpose. If, for example, the weather should become so warm that our root ceased to have any value as fuel, we should, I think, continue at our task, or leave it only with regret and a disagreeable sense of failure and frustration.

I pass on to say a very few words about the emendations of my conception of the rôle of instinctive impulses proposed by Mr. Graham Wallas in his very valuable book, *The Great Society*. Unlike Prof. Woodworth, who, by his use of the

[1] It is perhaps worth while to add the further history of this process. I had to go abroad when we had succeeded in dividing the main mass and extracting one half of it. My boy inspired some of his companions with something of his keenness and with their help extracted the remaining half.

terms 'mechanism' and 'drive,' has accentuated and insisted upon the distinction that I had made between cognitive and conative dispositions, Mr. Wallas seeks to abolish this distinction altogether. He says that I, in making this distinction, commit a formal fallacy, which he calls 'the fallacy of two planes,' in that I distinguish between 'instinctive impulses' and 'intellectual apparatus'. He seems to be under the impression that I regard instinctive activities as devoid of all truly mental nature, as 'anoëtic,' if not merely mechanical and unconscious; whereas I have insisted, more than any other serious writer on this topic, on the high complexity of the cognitive functions involved in many purely instinctive acts. Mr. Wallas seems to have become alarmed by the success of the attack upon 'intellectualism' which he made in his *Human Nature in Politics*; and he seems to have set himself to undo the results he had achieved. He now seeks to establish thought or thinking as an independent native capacity containing its own 'drive' or conative energy.

Comparing fear and thought, he says that I would describe fear as impulse and thought as apparatus. But, he says, "Fear and Thought, if we project our dispositions on to the plane of consciousness, are both impulses; and if we project them on to the plane of structure they are both of them 'apparatus'". He holds "that we are born with a tendency, under appropriate conditions, to think, which is as original and independent as our tendency, under appropriate conditions, to run away" (p. 47). But then he is not quite satisfied with the assumption that all thinking is the work of this alleged original tendency. He adds: "But even if, as I believe, intelligence is as truly a part of our inherited nature, and as independent a cause of human action as any of the traditional list of instincts, it is not a sufficient analysis of the facts merely to add a single disposition to the rest and call it Intelligence. There are at least two dispositions, curiosity and 'Trial and Error,' which sometimes cause action which is rather instinctive than intelligent, and sometimes action which is rather intelligent than instinctive. And there are two other dispositions (which I shall call Thought and Language) whose action is normally, if not invariably, intelligent" (p. 48).

He says that "Curiosity may be placed almost exactly on the doubtful line which divides Instinct from Intelligence" and that "if a distinction is to be drawn between Instinct and Intelligence, the disposition of Curiosity may in his case (the case of a curious astronomer) be classed as almost purely intelligent" (p. 49).

Again, Thought is "an independently stimulated disposition" (p. 231). "In the case of Thought the essential functions of the disposition are clearly intellectual. . . . I mean here by the disposition of Thought our tendency to carry out the process of reflexion or 'thinking'—the process to which we refer when we say that we stopped what we were doing in order to 'think'. The chief external sign of Thought in this sense is a bodily inertia, which contrasts sharply with the tightened muscles of Curiosity, or the random movements of Trial and Error" (p. 51). He sees in the occasional immobility of animals, during rest without sleep, evidence of their possession of such a 'disposition of Thought'. Language also is "a true inherited disposition" (p. 55).

Mr. Wallas thus proposes to rescue intelligence from the dire position into which it was thrown by his too spirited and successful attack upon it; he proposes to set up, alongside the instincts, these four 'intelligent dispositions,' of which one, Curiosity, is partially redeemed from its undignified and unintelligent position among the instincts, and the other three are created *de novo*.

There is a certain affinity between these views of Mr. Wallas and those of Prof. Woodworth. Both are attempts to give a modified sanction to intellectualism in psychology, which, I had hoped, had died a natural death upon the demonstration of the fallacy of the 'ideo-motor theory'. What is common to them is the rejection of the notion that the conative energy of the instincts suffices to sustain our more complex mental processes, and the endeavour to assign to such processes an intrinsic conative energy independent of that of the instincts. I have not time to criticise Mr. Wallas' views in detail. But I will say that of the two attempts Prof. Woodworth's seems to me by far the more attractive. There is in it no essential lack of clarity or of consistency of principle; it is capable of being logically thought through. But I cannot say the same of Mr. Wallas' scheme. I am sorry to find myself so far from agreement with him; because I regard him as a very valuable ally and I highly admire much of his work. But, if I may venture to be frank, I would apply a famous phrase of William James and say that Mr. Wallas seems to me to have made "one great blooming, buzzing confusion" of the whole problem of the relation of instinct to intelligence. Woodworth recognises with me that the intellectual apparatus of the mind is a vast and complicated structure, a vast ordered system of cognitive dispositions or, as he would say, 'mechanisms'. He would regard each of them as having in some degree that intrinsic energy

which I believe to be the peculiar property of the conative or emotional dispositions. Wallas on the other hand would save the independence of our intellectual processes from the sway of our instinctive impulses by inventing the new disposition to Thought whose energy is to animate all the apparatus of the intellectual life, in somewhat the same way in which I have imagined it to be animated and sustained by the conative energy of the instincts. And he makes closer the parallel between his disposition of Thought and the instincts by recognising an emotion of thought; for he says—"since Thought is a true disposition, it, like all the other dispositions, has not only its appropriate group of stimuli and its appropriate course of action, but also its appropriate emotion" (p. 245). If he had been content with this, I think his position would have been more respectable. But he is not so content. He invents also a disposition of 'trial and error' and one of language. And apparently he has a whole host of others more or less up his sleeve. For on one page he tells us "the psychological dispositions may be divided roughly into comparatively simple facts like the senses, memory, fatigue, etc., and the more complex facts of Instinct and Intelligence" (p. 56), and on another page (77) he speaks of "the disposition of habit," and on yet another (38) he tells us that "intelligence acts as an independent directing force". So that even fatigue and habit have their own dispositions, memory another, sense perception yet another; and I cannot see where Mr. Wallas can stop in this headlong process. He seems to be on the high road to a new faculty psychology of the very loosest kind; a psychology which will take every named function and peculiarity of our mental life and 'explain' it by attributing it to a special disposition or faculty. Finally I would point out that Mr. Wallas, after evolving his independently active apparatus of thought at the cost of so much confusion and disregard of all strict principles of method, introduces near the end of the book this surprising statement: "Any one of the Instincts can again serve as the motive which impels us to undertake and continue the toil of Thought, without, if we see clearly the facts of our nature, distorting either the methods or the conclusions of our Thought" (p. 244). That is to say, after all his labours on behalf of the independence of Thought, he falls back into the slough of McDougallism. The spectacle of so great and good a man thus falling off the ladder which he has laboriously constructed at such great cost is pathetic.

I had hoped to examine the views of a third writer, namely, Prof. W. E. Hocking, as set out in his interesting book

Human Nature and its Remaking. But I have time only for a few brief remarks. Hocking's account of human nature is based on the acceptance of instincts as the all-important foundations. But he is not very clear as to what instincts he accepts. He cites the lists of human instincts given by James, by Thorndike, and by myself; he expresses no decided preference for any one of them, though, in describing Prof. Thorndike's inventory as the most discriminating, he seems to imply approval of it. As my hearers are aware, Thorndike ascribes every distinguishable movement of mind or body to an independent instinct, whereas, in place of this innumerable multitude, James recognised some nineteen major instincts of man, and I a dozen, in addition to some few very simple almost purely motor tendencies on which the acquisition of our general powers of bodily movement is based. Hocking therefore introduces two convenient terms to distinguish the extreme views. He describes Thorndike as a 'splitter' and myself as a 'slumper'. And then in successive chapters he goes on to show that he himself is far more of a slumper than I am. He postulates, over and above the more commonly recognised instincts, certain 'central instincts' which he proposes to call alternatively 'necessary interests'. And these alleged 'central instincts' are made to play an all-important part in the 'remaking' of human nature. The central instincts are not specifically dispositions to thought, such as Mr. Wallas would have us recognise. For Hocking agrees with me, not only in being a 'slumper,' but also in recognising that thought is motived and sustained by instinctive impulses. "The exercise of thought," he says, "as has often been remarked, is a matter of our impulsive nature, and it is the underlying craving for action, not the particular type of activity, that betokens the instinct" (p. 62). What then are these central instincts? We read: "My judgment is that the most significant of human tendencies, those without which no theory of instinct would be worth its salt in illuminating human nature, are tendencies of this central sort. . . . I should include among these necessary interests our sociability as well as our curiosity . . . I have mentioned our formal interest in rhythm and I should add, in unity, harmony, differentiation, completeness and simplicity" (p. 65); and he adds an instinct for self-preservation or the "will to live". "In these necessary interests, we have the most significant but also the most obscure of original human tendencies. It is they that have been the chief stumbling block in the theory of instinct; for while that theory becomes comparatively trivial when they are omitted, it has always

been muddled when they have been included. . . . The chief difficulty of reaching a clear and exhaustive enumeration of these tendencies . . . lies in the fact that they are not distinct and separable entities. They are in reality various aspects of one fundamental instinct or necessary interest" (p. 66). That is the first step of the slumping process which is to raise the theory of instinct above triviality and muddle. He proceeds to 'slump' more thoroughly. "The question I wish to raise is not whether motives are compounded; it is rather whether they are originally separate. . . . Can we say, for example, that curiosity is one thing and the love of power or security a different and separable thing?" He goes on to argue that food-getting, play, fear, acquisition, construction, sex, and love of mankind in general are also all alike manifestations of one central instinct, the 'will to power' or the 'will to live'; for "eating by itself, is a form of conquest, surrounding what is alien and making it a part of ourselves". Play is "practice in mastery". "Fear is a negative expression of our concern for power—a form of the desire to be in a relation of power to experience." And so on. That is to say, Prof. Hocking is not content to regard the instincts as so many distinct differentiations of the original life energy, as I have done, and then to try to show how, upon this multiple basis of distinct conative tendencies, a new and higher unity is achieved by the building up of character and will. Rather he would avoid all this troublesome work of analysis and synthesis by assuming that the process of differentiation has never gone beyond a rudimentary stage, so that the building up, the unifying, of character is but a small task. If I could think this optimistic doctrine to be true, I should be glad to accept it and I should feel at liberty to retire and to cultivate my garden. I venture to suggest that this wholesale 'slumping' of the instincts by Prof. Hocking is at bottom the expression of the impatience of the practical man and philosopher with the slow process of scientific analysis. In conclusion I may refer to the fact that Prof. Hocking finds some support for his view by appealing to the authority of another great 'slumper,' namely, Prof. Freud, who has 'slumped' all the instincts in one, namely, the sexual instinct. I venture to think that he will in future find less support in this direction than he claims; for there are perceptible indications that Freud himself, as well as some of his disciples, is becoming aware that the 'slumping' has been overdone.

III.—SOME RECENT THEORIES OF CONSCIOUSNESS.

By A. K. Rogers.

The term 'dualism' in epistemology has sometimes involved, and almost universally is interpreted by its opponents as involving, the claim that the original and sole immediate objects of knowledge are subjective or mental states. It should be evident, however, that nothing in the word implies this necessarily. The essential point of dualism is, simply, the recognition that somewhere in connection with the knowledge situation a kind of fact is to be found which can be definitely distinguished, alike from the processes which science identifies with the physical organism, and from the objects outside the organism which we normally suppose ourselves to know,—the sort of fact, namely, to which traditional philosophy has assigned such names as sensation, feeling, idea, and the like. I propose to waive for the present all problems having to do with the part which the mental state plays in knowledge, or the relation in which it stands to the physical world; my sole purpose is to examine the claim that such things as mental states do not exist, but have been foisted on us by unscrupulous metaphysicians. And with this in view I shall consider certain recent attempts to reconstrue the situation in a way to leave them out.

The reason for the widespread disposition to repudiate mental states, apart from the—I believe mistaken—supposition that they lead to subjectivism in knowledge, is, probably, the immense simplification of the philosophic problem that would result, and, in particular, the greater ease of adjusting philosophy to science. The intrusion of an entity called consciousness into human behaviour is, it may be admitted, somewhat disconcerting to the seeker after smooth and uncomplicated theories. It has long been a disturbing element; and a certain impatience at the endless disputations to which the attempt to adjust it has led, is not unnatural. In the past we find materialism intermittently making a strong appeal to minds of a certain type—minds that care more for broad general effects than for careful

analysis—just by its success in evading the problem. But it is generally admitted that materialism works by shutting its eyes to facts of a certain sort. It is in a far more subtle and sophisticated form that the newer attempts are made, but their method nevertheless is in principle the same—to meet the problem of the status of consciousness by showing that the problem itself as commonly understood is illegitimate and unmeaning.

Before examining more closely some of the typical directions which this new quest has taken, it will be advisable to call attention to certain ambiguities to which the word 'consciousness' lends itself, since these play a very large part in the situation. The chance for ambiguity is well exemplified in James' important and influential essay, "Does Consciousness Exist?" Now when in modern times a philosopher maintains that consciousness *does* exist, the primary, and certainly the simplest meaning to be attributed to him is, that there exists a certain stuff of immediate experience known traditionally to psychologists as constituting the subject-matter of their science, and independent of the stuff of the physical world. And in the end James may be said to deny consciousness as thus defined, though with qualifications very important for the estimating of his doctrine. But explicitly his thesis turns upon something quite different, not at all to the advantage of clearness. What primarily he starts out by denying is indeed not consciousness in *any* prevalent sense of the word, but the *self*, or the diaphanous substitute for the self represented by Kant's transcendental ego, as a hypothetical receptacle of consciousness, or source of consciousness, or 'knower'. Nothing but confusion, however, can arise from identifying the fate of consciousness with the fate of the self or knower, and the entire demolition of a substantial self would not affect at all the position of most present-day defenders of the concept.

What, however, for the most part James himself really is talking about under the name of consciousness is, as soon appears, *not* the knower; it is the act or process of *knowing*. Now knowledge is, I have no wish to deny, a proper claimant to the title of consciousness; certainly, in recent discussions, 'to be conscious' more often than not is to be taken as meaning 'to be conscious *of*,' or 'to know'. But this makes it all the more necessary to proceed cautiously in argument. Since there is a natural and innocent difference of meaning here possible, one should make very certain that he does not shift his own interpretation in the course of discussion, or that he does not yield to the temptation to refute an opponent by

the unconvincing device of changing the definition of his opponent's terms. Consciousness as a fact of psychic existence, in the sense in which all but the most recent psychology has been wont to talk of sensations and the like, is one thing; consciousness as 'knowing' is not, self-evidently, the same thing. If the doctrine that consciousness is not an existent but a relation, means no more than that *knowing* is not an existent but a relation, it loses most of its appearance of novelty and paradox. Knowing then is *not* an existent. The self, or knower, may not *be* at all. The *objects* of knowledge may be as such not subjective or mental in the least. But none of these propositions trouble the dualist, because they all refer to something quite different from that which, rightly or wrongly, he has in mind when he declares that such a thing as consciousness exists.

I have no intention of implying that when these ambiguities are avoided, the case against consciousness falls to the ground. On the contrary, the recent reaction against the concept has brought to light certain definite types of philosophical theory that are rather unusually novel and interesting, and that deserve consideration. I only say that we shall get nowhere unless we do make clear to ourselves precisely what it is we are talking about; and certainly we shall not succeed in refuting alternative possibilities without first recognising accurately what they are. And it might therefore, in view of the many chances of misunderstanding, be better to avoid the term consciousness as much as possible. Accordingly I shall, unless the situation seems unambiguous, call the supposed subjective facts (the entities in dispute) psychical states rather than states of consciousness; while knowledge, or knowing, there is no trouble in calling by its proper name.

What is, then, the main burden of the new theories? Primarily this, that there is no 'content' of perception of a peculiarly subjective sort, but that such content is constituted by the actual bodily presence of the known world of objects. If this is so, objects must apparently become 'objects of knowledge' (consciousness) by taking on under specific conditions certain new relationships. When therefore we say that consciousness is a relation, the primary and most unambiguous thing we seem to mean is, that 'things' become the 'content of knowledge' only as they enter into these particular relations,—to one another or to a further entity,—whereby something additional becomes true of them which did not hold when they were just plain objects. And then it is incumbent upon us to specify just what the relationship may be.

As a first type of answer to this question I shall turn to the English neo-realists as represented by Mr. Alexander. And it is necessary first to stop for a moment to note another ambiguity in the term consciousness, which extends also to the corresponding term 'knowledge'. By knowledge I may mean the content of knowledge, or I may mean the act of knowing. If we use the term in this last sense, we no longer have the theory that consciousness is a relation, but that it is an *act;* though if something called a 'knower' be also admitted, the act may in a secondary sense involve a relation between the knower and the things which it knows. In Mr. Alexander's case, however, the act is not strictly an act *of* something, but an ultimate entity; and so for him consciousness as *knowing* is not a relation, but a 'subjective' entity of a sort, ultimate and indefinable. However, that which renders a particular object a content of knowledge may still be regarded as a new relationship into which it enters to the 'act' of knowing, or to 'awareness'—a relationship which Mr. Alexander calls 'compresence'.

The chief merit I find in Mr. Alexander's type of theory, as compared with earlier attempts to get rid of psychical states, lies in the way in which it is able to do justice to the actual qualitative diversity of the world. In old-fashioned materialism, any place in the universe for the quality 'redness' as such has vanished; and the materialist has accordingly to shut his eyes to the fact that such qualitative redness is an actual part of reality, with a perfectly definite character of its own, not discoverable either in the nervous activities of the organism, or in the environment as scientifically described. Mr. Alexander's type of realism, by its peculiar doctrine of awareness, escapes this fatal objection. It does this by the original and ingenious device of accepting at its face value the full fact which traditionally has been called a sensation, and then analysing it into two separable parts, the objectionable 'sensation' entity disappearing in the analysis, while yet the qualitative nature for which materialism finds no place remains. In other words, the 'character' of the supposed mental state sets up in business for itself as the 'object,' while the 'subjective' aspect is left as a bare contentless act, deprived of all substantiality and qualitative variety, whose coincidence then with a given quality constitutes the knowledge or awareness of it. A 'red' sensation thus turns into a sensation or awareness *of red;* and in 'red' we are already outside the subjective realm, in a strictly objective universe.

A criticism of Mr. Alexander's theory might start from

any one of three points—the conception of the 'object' with which it leaves us, the conception of mental activity or awareness, and the relation between the two. To be adequate, however, it would have to involve something like a complete survey of the epistemological problem; and accordingly I profess here only to be noting the general nature of the doubts which the theory calls forth in my own mind. And most of these have a common root. I find it far easier, that is, to realise, and to accept, the concrete mental experience from which the analysis proceeds, than I do either of the entities into which this is split up. Both these entities indeed appear to me abstractions in which, except as abstractions, I find it impossible sincerely to believe. On the side of the 'object' there is, to be sure, a definite and thinkable content, since all the qualitative character of the original fact was placed there; but it is content quite devoid of the existential and causally effective character of what I naturally mean by an objectively real world. Abstracting the qualitative essence from my experience gives me redness, and spatiality, and the like; but it does not, so far as I can make out, give me *red things in real space;* it is, in short, a scheme of logical properties, rather than a red-blooded world of actualities. If one does not object to finding his universe reduced to logic, this will not trouble him; but at least one should recognise clearly that the 'object' *redness*, and the object *red existence*, have no plain identity of meaning, and that it is only the first that has been brought unambiguously 'within experience'.

On the 'subject' side the difficulty is similar, but appreciably greater, since in abstracting 'awareness' from its object there is no content left in terms of which to think this mental 'act'. Now I do believe in the presence, in knowing, of what can be called 'activity'. By mental activity I mean, however, something that can be empirically described—a succession of concrete mental states characterised by a sense of direction, of intent or purpose, made possible through the presence of an 'idea' of some future end or event to which the process is felt as leading up. But this makes use of that concept of the mental, as a stream of psychical existences specifically qualified, which the theory in question repudiates. And what an act is *sui generis*, as an indefinable something that is neither bodily movement—a physical act,—nor the ideal realisation of intent, I confess to an entire inability to understand. Action, unless we choose to give the term a meaning quite different from what it means in any normal human use, implies something of which it is the act; and

there cannot be an act *of* that which has no nature *except* action. Now, of course, we shall find no qualitative content in perception as a 'mental' fact, if we have agreed to mean by the mental only the 'process' of perceiving, from which all content has been carefully removed. And indeed in *no* sense can the 'process' of perceiving be said to be coloured or odorous. The act itself is not coloured, because 'act' is a term calling attention not to the content of the psychic stream, but to a functional or relational aspect of it; and relation and quality are different things. But before we conclude from this that colour quality is exclusively in the object, as distinct from the 'conscious' fact, it is well to make sure that the 'act' has any concrete existence at all except as it is embodied in a flow of immediate psychological experience, to which colour quality *may*, and some quality or other *must*, belong. In the *total* 'subjective' fact, *both* quality and function are involved.

And now having torn apart two indivisible aspects of a single thing, it will not be strange if it proves troublesome to get them together again satisfactorily. One can understand that it might be difficult at best to make plain the relationship between a diaphanous and indefinable 'act,' and an abstract quality,—a relation with the peculiarity that one term *is* nothing but the awareness of the other term:[1] and perhaps no better case could have been made of it than Mr. Alexander has made. But to my own mind few things could be more unilluminating than to explain knowledge as the mere 'togetherness' of awareness and a quality. Togetherness, as among the emptiest and most general of all relations, can in the nature of the case donate no very distinctive character to knowing, though knowing is surely one of the most peculiar and characteristic facts of the known world. And on the other hand it seems to approximate all other cases of togetherness in the universe to knowledge, which at the least goes against a natural instinct of belief; so that the table, for example, 'knows' the inkpot which presses upon it.[2] It is true Mr. Alexander goes on to say that it is only when one of the related facts is a mind, that there is knowing *in the proper sense*. But if this means that it is purely a misuse of words to follow the lead of the definition, and speak of knowing in these other cases, it would seem to throw doubt on 'togetherness' as an adequate analysis of the knowing relation.

There are indeed certain things in Mr. Alexander's

[1] *Cf.* Russell, MIND, xiii., p. 510. [2] MIND, xxi., p. 318.

exposition which might appear to point to a different conception of the relation, such as would, if adopted, give it a more definite content. The more he insists that awareness is an activity of the physical organism, and finds in it a describable character called 'direction,'—provided this direction does not, as mostly it would appear to do, reduce merely to the varying character of the 'objects' of which we are aware,—the more one might be inclined to suppose that there lies in the background of his mind an altogether different notion of consciousness, with reference to which the preceding remarks would be more or less irrelevant. But the conception of consciousness as a physical act of the *organism* 'directed' to a particular portion of the environment—the doctrine in general of the American realists—he plainly does not intend for the most part to be interpreted as meaning.

There is still another possible interpretation of the situation, which is the one I should myself adopt. Indeed it is the only way that enables me to understand some of the things that Mr. Alexander has himself to say. But as it would mean the abandonment of most of his distinctive doctrines, I do not of course suppose that he would accept it. I may introduce it by noticing a difficulty which Mr. Alexander himself feels, and with which he wrestles in a number of places, never with entire success. It is the difficulty of understanding how we can know the mind, or the 'subject' side. Apparently we do know it, for we can talk about it, and make various statements about what it is and is not. But if we *define* knowledge, with Mr. Alexander, as the compresence of awareness with an object or qualitative content, and if the awareness, not the object, is the 'mind,' then apparently the mind cannot be known. If the self were a presentation or object it would be a sensible thing, which it cannot be.[1]

The only way I find that Mr. Alexander escapes this difficulty is by introducing without notice a new and undefined sense of the term 'knowing'. "I cannot," he says, "have knowledge *of* my mind, in the sense of making it an object of contemplation, for that would mean that my mind could act upon itself. But I can know my mind, for I am my mind, which is an experienced experiencing, though not an experienced object."[2] Now the only way to make sense of this is, I am convinced, to recast entirely our definition of knowledge, taking care in the meantime to avoid another and very subtle ambiguity. Mr. Alexander's trouble is due to two things,—first, that in knowledge the object must on

[1] *Proc. Aris. Soc.*, 1910-11, p. 18. [2] *Ibid.*, p. 19.

his showing itself be identically present, and, second, that all the qualitative character of reality is placed on the object side. Accordingly the self cannot contemplate itself, alike because there is nothing to contemplate, and because it cannot dirempt itself and be present in two forms at the same moment. But if we were to suppose that normally knowledge is, instead, *mediate*—a knowledge of something *not* present in experience in person, and if the 'experiencing' which constitutes the self had specific qualities that could be reproduced, there would be nothing against the possibility of presenting some *past* phase of the mind to knowledge or contemplation, and so getting the information which we unquestionably do possess about it.

It still would remain true that we do not know the self *at the moment of* its experiencing; if knowledge is mediate, the self as knower is, concretely, outside the field of knowledge. We can know it *as* existing; but its actual felt presence is no longer there in the fact which has become a known object. But now I agree with Mr. Alexander that there is a different sense in which we yet may properly be said to be 'aware' of this *present* self; it can be directly 'experienced,' or, as Mr. Alexander puts it, be 'lived through and enjoyed,' even though it cannot be contemplated or known. What Mr. Alexander calls 'living through' is, however, exactly what I should mean—and I believe I am representing here a perfectly familiar thesis—by the 'existence' of the mental as a 'psychic state'; it is just this presence in the form of immediate feeling which constitutes psychic existence. If by awareness we understand, then, no more than immediacy of feeling existence—a sense of the word easily distinguishable from contemplative and attentive 'knowledge of,'—the full sensation, quality and all, may intelligibly be called a case of 'awareness'. And I am at least, for this distinction, asking no other privilege than Mr. Alexander claims when he talks of 'enjoyment' as 'knowing itself'; indeed it seems distinctly easier to justify experiencing as 'enjoyment' on the theory which admits qualitative distinctions in the experience enjoyed, than when all such distinctions are placed outside the enjoyment in the object. For I really do not see how one is to be able to distinguish enjoyments which have no inner qualitative distinctions.

Among American realists, or near-realists, the act of awareness is, so far as I know, universally repudiated; and a different answer is needed therefore to the question, What is the nature of the relationship to which consciousness is to be reduced? And to repeat, the primary meaning of this

question grows out of the demand that the *content* of knowledge shall be so identified with 'things,' as to eliminate the need for a new 'subjective' fact, or mental state, of a sort differing in nature and existence from the objectively known world. To this end the object itself is conceived as becoming an object of knowledge by entering into a specific new relationship, either to other objects which constitute along with it the field of consciousness, or to some further fact—the self, or organism, or knower.

It is the first of these alternatives which James explicitly adopted. According to James' doctrine, the universe is a collection of bits of 'pure experience,' capable of entering into a variety of relationships; and one of these relationships is that of knowledge. One experience, namely, is known by another,—for here the relationship, holding as it does entirely between the objects of knowledge themselves, does not permit any knower outside the conscious stream,—when it is connected with it through a series of transitional experiences that lead up to it or to its vicinity, this very same bit of reality being however conceivably, at the same moment, in relationship to other facts such as constitute it a physical object, or to transitional experiences which make it an element in other streams of consciousness, or other minds.

For James also, it is to be noticed, all the qualitative content of the world of appearance is saved, since each identifiable aspect of this world is a bit of pure experience, and each experience is in its nature precisely what it is *experienced as*. In such a theory, however, he is by no means as far from the traditional notion of consciousness as his words might lead us to suppose; indeed he seems on the contrary inclined in a certain real sense to reduce the entire world to consciousness. Since the immediate fact of experience is not, as with Mr. Alexander, split in two, and the 'subjective' given an independent and quasi-existential standing, it is still open to maintain that the entities which enter into the relation constituting knowledge are in themselves essentially 'psychic' stuff. It is plain that in his latest writings James does show a strong leaning towards pan-psychism; and the fact that he continues to call the ultimate constituents of reality pure *experience*, is corroborative evidence. And now the verbal obscurity here is largely cleared up when we recognise that what James has really been thinking of is not so much 'knowing' after all, as the presence together of elements in a *unity of experience*. And this explains why he is so ready to shift the meaning of consciousness back and forth between knowing and the 'self'; what mainly he is trying to show is

that the elements of experience may get into an experienced unity, and be felt as *mine*, through a mere combination among themselves, and without appealing to any further agency called a self. With this in view, it is a secondary matter whether the elements themselves be regarded as in their own nature 'psychic' or not. It appears to me that James was much too hasty in assuming that the unity of *knowledge* is an adequate paraphrase of this unity of experience as *mine*. Surely much is present within the unity of the self which does not deserve the name of knowledge; and it would have been much better therefore if he had put the problem explicitly in terms of 'felt unity,' rather than of 'knowing'. But even then, to return to my main point, it would be possible to mean by consciousness the psychic (felt) character of the elements, rather than their 'together' aspect, or the conditions under which they form a unity; and if one *did* mean the first, James' polemic would leave him quite untouched.[1]

Accordingly when we eliminate verbal ambiguities, James does not turn out to be in sympathy with the neo-realistic endeavour to eliminate the 'psychic,' whether or not he is willing to call this 'consciousness'; though he does wish to get rid of any difference between 'physic state' and 'object' in the knowing experience (epistemological dualism). Even this, however, it may be questioned whether he is altogether successful in doing. The facts suggest at least two limitations on the satisfactoriness of his theory that knowledge is a series of transitive experiences, issuing in a perceptual experience which *is* the object known. Strictly, if we follow James' account, we have no right to talk of knowing an object, in the sense in which this involves a conscious recognition of it, until the object is there bodily in experience. And then the earlier stage will no longer be present to constitute it known, and it will be no more than itself 'enjoying'

[1] I do not mean to imply that I myself should admit that experience is a combination of pre-existent 'conscious' feelings, though I see no reason to deny that there may be conditions leading to the appearance of 'pure' feelings which do not, in James' sense, belong to a complex unity. But the actual human experience which we know it seems to me far more reasonable to take as a flowing stream of existence which arises and passes away in time, and whose unity at any given moment can be broken up into parts only by an artificial abstraction. Indeed it strikes me as most remarkable that so enthusiastic a defender of the 'flowing' philosophy, who is everywhere emphasising the claims of novelty and genuine creativeness, should have committed himself in his epistemology to a doctrine which, by turning the entire content of the inner life into quasi-substantive bits of stuff, almost equals Spencer in reducing history to the continual reshuffling of more or less permanent elements or counters.

itself, on a par with any other bit of pure experience that one might select; so that 'knowledge about' would appear to be impossible, and 'knowledge of acquaintance' has no right to the name. At best,—unless knowing be regarded as not in itself an experiencing at all, but only the impersonal *fact that* some later experience is on the way,—the knower can only be the pure experience just preceding, and one experience can only know its *immediate* successor; but this is wholly out of relation to what concretely we mean by knowledge. It is absurd to say that I do not know a future event of which I am thinking, but only the first step necessary to lead me to this event, which first step then knows the second, and so on. But now if we recall James' *real* problem, it is possible also, I think, to see why the absurdity fails to strike him. For if we are trying to explain, not, after all, how one thing can know another, but how it can be joined to another in an experienced unity, then of course it *is* only two immediately contiguous elements that thus flow together. But this only accentuates the difference between being felt together, and thinking about or knowing. As a matter of fact, all non-perceptual knowledge, at least, *anticipates* the *actual* objects, which it yet may really 'know'; and consequently it involves just that dualistic transcendence of the object to the knowing 'idea' which James repudiates.

In Prof. McGilvary we have an ingenious attempt to develop James' general position along more strictly realistic lines; and an examination of his argument will, I think, help to enforce what I have just been saying. He starts with a criticism of the denial of 'transcendence' not unlike that which I have just suggested.[1] The logic of James' own doctrine requires knowledge of a world of reality with which 'consciousness' is by no means coextensive—when, that is, the perceptual presence of objects is prevented or delayed, —although these extra-experiential objects are capable of entering into consciousness on occasion, and are believed in on the ground that they are necessary to extend and complete the field of experienced fact. Apparently, then, though Prof. McGilvary so far as I am aware does not say so explicitly, and even at times definitely implies the contrary, this should lead him to abandon entirely James' identification of consciousness with knowing. Consciousness can hardly mean just knowledge, if it is possible to 'know' that which at the moment is not in consciousness; the things of which we are conscious are no more than an island in an immense

[1] *Phil. Rev.*, xx., p. 137 ff.

ocean of fact to which knowledge can attain. What instead we *are* to mean by consciousness is this smaller world of 'experience for a self,' which excludes many entities at a given moment as not present in the peculiar relationship of experienced unity.

In so far I am at one with Prof. McGilvary. I also should hold that the field of consciousness, in its first intention, is not that of knowledge, but coincides, rather, with the content of an individualised experience in the setting of a larger known world; and I should hold that there is a unity to this field which can only be 'felt' from the inside. What I need to be shown, is the propriety of describing this situation in terms of 'objects' which in themselves are non-psychical, plus a new and unique relationship.

And first as to the nature of the supposed relation; for Prof. McGilvary frankly rests his case upon the ability to locate and specify this. I have tried sincerely to get a glimpse of the precise fact which he is endeavouring to point out, and I think I have succeeded; but if so, the result does not seem to me favourable to a 'relational' theory of consciousness. For what I find is either a relation which defines something not necessarily identical with 'consciousness' in any natural sense of the term, or else it is *not a relationship at all;* and I rather suspect that Prof. McGilvary moves back and forth between these two positions.

There are two terms in particular through which he attempts to identify the relationship he is after—*unity*, and *feeling*. If we define consciousness as a 'way of being felt together,'[1] we have the two in conjunction. But such a phrase is not entirely unambiguous; 'felt,' that is, might be intended to characterise the objects that are together, or only the 'togetherness'. Now, strictly, if consciousness is to be reduced to relation, the last ought to be the meaning; the relation is itself a specific stuff characterised as feeling, which added to other specific stuffs makes a thought out of what it is added to.[2] Consciousness thus will mean the felt togetherness of things, or, as an alternative phrase, their 'experienced' togetherness; since feeling things together, and experiencing them together, are words that express precisely the same fact.[3]

But concerning this I should want to make two remarks. And first, it is a strange way of *defining* experience to say that it is an experienced relation. Of course whatever you

[1] *Jour. of Philos.*, viii., p. 524.
[2] *Ibid.*, p. 515. [3] *Cf. ibid.*, p. 524.

assume as belonging to experience is experienced; but that presupposes, rather than defines, your concept. Unless then we are to have a circular definition, it must be the 'togetherness,' rather than its 'feltness,' which constitutes experience. But togetherness plainly is not the specific relation we are after, for it attaches to many things that are not consciously experienced.

But now in the second place, as has been remarked before, the relation of unity or togetherness is in any case constitutive rather of the concept of the 'self,' than of the concept of 'consciousness'; what most unequivocally has its limits defined by this felt unity is the content of an individual life. Now it is true that such limits may also be regarded as the limits of experience or consciousness; I should agree that they ought to be. But it does not follow that because the empirical self is coterminous with felt experience, that the two concepts are therefore definable in the same manner. It is quite possible that, though felt unity be fundamental in the concept of a self, unity *can* be 'felt' only when the contents or objects entering into the unity are of a particular 'psychic' sort; and that their psychical (or conscious) character needs accordingly to be defined independently of the unity into which this special kind of content can enter.

Now if this were so, it would seem that 'feltness' would need to be interpreted as belonging also to the *content*, and not simply to the togetherness. And this appears to me actually the case; there *is* a kind of reality whose existence has that felt immediacy which constitutes the psychic, or experience stuff. But *if* this interpretation is adopted, then consciousness no longer is a *relation*. As something that characterises the content as such, not a connexion *between* content, it is precisely the doctrine that consciousness is a form of existence. When accordingly Prof. McGilvary speaks of 'feeling' as a unique kind of relation that obtains among certain natures, a *way* in which things are together with each other, and of experience as a unity of things present in the way of immediate *feeling*,[1] it seems to me that in the interests of a theory he is falsifying a true fact. The fact is, that presence in the form of immediate feeling constitutes the 'conscious'; the falsification lies in supposing that 'feeling' can be turned into a *relationship*. Surely of all substantive facts feeling is the most stubbornly so, and the least capable of being attached externally as a relation to the felt content. I can only explain Prof. McGilvary's

[1] *Jour. of Philos.*, p. 518.

untroubled acceptance of it as such, by supposing, again, that in talking of a felt unity, he confuses the *feeling* with the *unity*, which last *is* of course a relation.

And now the alternative *non*-relational interpretation seems to me to preserve all the good points in Prof. McGilvary's contention, while it certainly avoids some difficulties. Thus for example, for Prof. McGilvary,[1] ideas and images, equally with percepts, have to be considered as objective and non-psychological entities passing in and out of consciousness, with the—to the neo-realist concerned to explain error—useful, but surely rather doubt-provoking property of actually occupying space, though without being space monopolising. This is an ingenious construction certainly, and logically not impossible; but I cannot help feeling that it is one of those works of logical artifice, so common in philosophy, which one has to put himself into a special frame of mind really to believe. Meanwhile I may note one advantage belonging to the existential theory, that has been previously implied; it enables us to give a clear meaning to 'felt unity'. So long as we are trying to *define* experience by such a phrase, 'feltness' has no sense which does not involve a begging of the question. But if we assume instead that feltness is a form of immediate *existence*, and that it is such 'feelings,' in a certain unitary complex, that constitute a self, the immediate 'sense' of unity would also be characterised by feltness, since, as an aspect of experience, it must itself also be assumed to be the feeling sort of fact that alone can enter into the life of a self.

In turning next to Prof. Woodbridge's definition of consciousness as the relation of 'meaning,' I am handicapped by a difficulty in assigning to his own account of the matter a sense precise enough to give me confidence that I may not be misinterpreting him. His criticism of traditional doctrines I can largely understand and even sympathise with, though I find here, as in James, an unnecessary confusion between the concept of consciousness, and the 'receptacle' notion of a self or mind. For one who has already dropped any existential distinction between mental states or ideas, and objects, it is natural to interpret the presence of these objects in a 'mind' as a case of relational unity, rather than to suppose them 'contained' inside some other object; but the polemic against this latter notion will hardly interest the philosopher whose concern is wholly with the denial of a dualism. Prof. Woodbridge's own proposed substitute, however, appeals to me rather as 'thrown out' in a large

[1] *Cf. Philos. Rev.*, xxi., p. 152 ff.

suggestive way, than as revealing very clearly its own logical source and compulsoriness. And one form in which my difficulty might be put is this: Is the relation supposed to be one between the individual objects of consciousness themselves, or between these collectively, and a further fact? In most of his express statements the first would seem to be the true interpretation. Thus consciousness is placed on a level with such other ways in which objects are related to one another as time and space.[1] And indeed in what is perhaps his most explicit definition, we are expressly told that meaning is equivalent to *implication*, or *logical relation*.[2] In line with this is a passage which speaks of consciousness as the one relation which makes possible an *immaterial synthesis* of objects[3]; and the same interpretation would give meaning to the claim, otherwise not very easy to understand, that the 'meanings' of the solar system, though not the solar system itself, can be condensed in a book.[4]

But then of course consciousness is *not* logical implication in general. Such a thesis has no plausibility whatever; and Prof. Woodbridge in the end evidently does not intend to maintain it. Is meaning then some particular *form* of implication? Apparently it must be, though *what* form it is we nowhere find stated in plain terms. The choice of the word however, and most of the illustrations given, suggest only one natural answer—that consciousness, namely, is *teleological* implication. Thus it is exemplified in the way in which water 'means' the quenching of thirst.[5] Other examples, it is true, seem more ambiguous. When we are told that ice means that it will cool water, or that building materials mean the future building,[6] it is a little difficult to distinguish meaning here from the bare causal relationship; and this would clearly take us outside the 'conscious' realm. But since both houses and ice-water have a close connexion with human ends, we may assume that such ends are implicitly in mind. And the matter seems settled when we find it expressly declared that sense qualities become indexes of a variety of possible *reactions*, and *thus* are connected in the relation of implication.[7]

But now this ought, I should say, to make it necessary to recast somewhat the earlier statements of the doctrine. For it now appears that consciousness is, not a relationship between objects, but the relation to a further fact which is not

[1] *Jour. of Philos.*, ii., p. 120.
[2] *Ibid.*, vi., p. 449.
[3] *Garman Studies*, p. 160.
[4] *Ibid.*, p. 160.
[5] *Psychol. Rev.*, xv., p. 397.
[6] *Garman Studies*, p. 159.
[7] *Jour. of Philos.*, vi., p. 454.

as such a content of consciousness at all—the organism. And this accounts for the way in which we find Prof. Woodbridge suddenly talking about the *body* as for some reason required to form a 'center' for the relation of consciousness,[1] though there is nothing whatever in his first formulation to call for such a center, or explain its rôle. I am not implying that there is, or need be, any very fundamental inconsistency here. But there is at least an unfortunate ambiguity in the phrasing, in that consciousness is used, without notice, in two variant ways. It is the difference, again, between a definition which involves only a field of known objects, and one which takes in the underlying conditions that bring these objects together; and this last is clearly the more fundamental. It is in the former sense that Prof. Woodbridge seems to be trying to define consciousness when he talks of the relation of meaning or implication—a relationship among the objects themselves. But this definition becomes doubtful when it is subjected to examination. It is not the mere *logical fact that* objects have a teleological or representative character—all that belongs to them as part of a logical system of implication—which constitutes them facts of *consciousness;* not only is it unnecessary, if we are to be aware of a thing, that we should be aware of it *as* in this particular relation, but for the neo-realist at least, I should suppose, a teleological scheme is just as subsistentially real *out* of consciousness as any other logical scheme. What brings objects together in consciousness is, rather, a relation supervening upon them—a common relation to another and non-logical reality, the physical body. But then we naturally find ourselves talking of consciousness in a *new* sense, as a *complex* of the objects *of* consciousness, and of that which is conscious of or knows them. Consciousness now becomes, not meaning or logical implication, but a 'result of the interaction between organism and surroundings'; and consciousness as a field of objects is no longer an independent relational scheme, but something which belongs *to* the organism.[2] And how the concept of consciousness in *this* sense ever could have been derived from an analysis which ignores the organism,[3] I cannot at all see; it is much easier to suppose that Prof. Woodbridge has unconsciously shifted his ground. Consciousness is now, in other words, the *mind*, in the sense in which this implies a knower as well as something known. And it only remains to estimate the plausibility of a thesis which asserts that whenever any physical organism through

[1] *Garman Studies*, pp. 161, 165.
[2] *Jour. of Philos.*, vi., pp. 449, 450; ii., p. 123. [3] *Ibid.*, vi., p. 449.

its sense organs and nervous system responds to the surroundings. the complex fact becomes forthwith, without the addition of anything new, what we are accustomed to call a conscious mind.

It would appear, then, that Prof. Woodbridge's 'meaning' is only an unnecessarily puzzling formulation of the 'behaviouristic' theory of consciousness to which later neo-realism gravitates. And here at last we have a thesis which might seem at any rate clear-cut and understandable; the relation which constitutes consciousness is a relation between a specific fact, the nervous organism, and other specific facts in the environment to which the organism actively responds. The content of consciousness is thus a cross-section of the world on which, in Prof. Holt's metaphor, the searchlight of the organism plays, and the 'mind' is the unity of the reacting body and its objects.

We know what the two related facts are, as I say; and we know also the relation, *if* we keep within the universe of discourse in which science naturally moves. We know it, that is, in so far as the response is definitely a physical and causal reaction to a part of the physical environment; the relation then becomes intelligible to the degree in which physical interaction anywhere is intelligible. But the more we acquiesce in the ultimate metaphysical issues for which neo-realism stands, the less satisfying is the conception likely to appear to one who is not already a convinced partisan. For it is not an ordinary causal relation between two physical facts, wholly or even chiefly, that explains the conception of conscious content which the neo-realist entertains. The environment is only in small part physical in any natural meaning; it is made up also of events past and events future, of mathematical equations, logical formulæ, ethical and æsthetic ideals, creatures of imagination, hallucinations and sense illusions. Now I do not affirm that it is totally impossible to manipulate this complex and puzzling situation in the way the thesis demands; but I do claim that the path is by no means so plain and open as the neo-realist philosopher assumes, and that his short and easy method with unbelievers, which takes for granted a self-evident identity with the biological notion of response, is unfortunate if he really wants to convince them. I grant willingly the *fact* that we react cognitively in *some* sense to all these things. But it also appears to me that the fact necessitates a considerably more elaborate machinery to account for it than biological science supplies. It is only when we go on to *falsify* the *apparent* fact, through ignoring the plain distinction, for common sense, between having an idea in mind,

and acting upon it, that we find ourselves unambiguously inside the realm of physical science, and in consequence are able to get a specific relation which is not merely verbal—the relation of physical interaction. But this new relation, as I say, in becoming specific, is also narrowed in extent, and applies in any self-evident sense only in the case of physically existing objects.

Accordingly we are confronted by what may appear to be a difficulty. Either behaviourism leaves out, as materialism has always done, essential aspects of the universe which we know, or else, while allowing them to remain, it yet refuses to admit some of the conditions which naturally they seem to imply. I find it impossible to understand, that is, in what sense behaviourism can continue to believe in that qualitative variety in the universe for which neo-realism originally stood sponsor; the disposition shown by Prof. Holt to explain 'quality' away, seems to me far more consistent. For surely colours and smells and tastes *as such* do not belong to the explanatory apparatus of the physical scientist; and since the whole aim of the behaviourist is to acquire scientific merit, he ought not to blow hot and cold with the same breath. Let him either accept consistently scientific concepts as the scientist uses them, and then there is no epistemological advantage whatsoever that he possesses over scientific materialism as it has always existed; or if he does still maintain without reservation that smell quality, and pain quality, and the like, are actual constituents of reality, let him make this entirely clear, and not cover up in any way his scientific heterodoxy by juggling with the ambiguous connexion between such qualities, and mere molecular movements, chemical changes, or nerve vibrations. And if the qualities are *not* in the physical world, but still *are*, he may be asked to tell us plainly what right 'science' gives him to talk about a *physical* reaction to a merely *logical* fact not embodied in any physical presence, and what meaning 'response' has if *not* this plain physical meaning.

And meanwhile from the other or 'subjective' side the difficulties are even more pronounced. That the act of knowing is identifiable descriptively with a movement of an organism or its parts, is equally absurd whether it is affirmed by old-fashioned materialist or up-to-date behaviourist. Knowing is an experience plainly distinguishable from movement, even when the knowledge is of some physical object actually present and in relation with the organism; and it is still more undeniably so when the 'object' is *not* physically present, as in the case of a logical fact, an unreal or hallucinatory object, or a past or future event. For knowledge is

characterised by what is in some true sense the *apprehension of* an object, and not by *movement toward* an object. I am somehow aware of the object's actual qualitative nature, the presence of which in knowledge cannot therefore be identified with, say, a future fact not now present, even though to this future fact my act may as a matter of fact be tending.

The assertion of the causal influence of something not at the moment present to exert this influence, along with an absence of any sufficient machinery to make this intelligible, is especially prominent in the behaviourism of some of the later pragmatists. Thus Prof. Bode *defines* 'being conscious' as having a future possible result of present behaviour, embodied as a present existence, functioning as a stimulus to further behaviour.[1] I shall not stop to labour further my difficulty in understanding *how*, apart from some 'idea' of a future event, which is taboo, the future can thus influence the present. To appeal to the 'nascent activities'[2] which as a matter of fact *will* give rise to some future action, is not in the least to explain, or to justify, the claim that this future outcome *controls* conduct; the only intelligible source of control, on a purely physical basis, lies in the past which has shaped these activities to what they are, and in the present environment which determines their success or failure. All I wish in conclusion to notice is, however, that here we have still another claimant to the title of consciousness, to complicate the formulation of the problem. For what Prof. Bode starts out to define under the name of consciousness is neither the 'mind,' nor psychical stuff, nor experienced unity, nor knowing, nor knowledge content, but 'intelligence';[3] and intelligence is assumed at the outset to mean intelligent *behaviour*. In other words, we start explicitly from the standpoint of the scientific observer endeavouring to mark the true distinction between 'intelligent' conduct in an organism, and mere mechanical habit; and since the problem is already set in terms of behaviour, it is not strange that behaviour comes out in the answer. I should agree with Prof. Bode that an external description of the difference between intelligent and unintelligent action is possible, and that the difference is what he finds it to be. But this still does not settle the problem of 'consciousness' for me, unless I wilfully decline to ask certain *further* questions, which the pragmatist, by his choice of presuppositions, has succeeded to his own satisfaction in shelving, but which happen still to press themselves upon me as real problems.

[1] *Creative Intelligence*, p. 240.
[2] *Ibid.*, p. 244. [3] *Cf. ibid.*, p. 242.

IV.—A NEW THEORY OF SLEEP AND DREAMS.

By Eugenio Rignano.

Dreams have always exercised on psychologists the fascination of a great enigma. How can it be that a healthy soul gives, in dreams, the strangest, the most incoherent, the most illogical manifestations, and afterwards, when awake, performs its function again in the most normal way? that is the great problem which till now, one may say, has remained unsolved.

The cause is perhaps to be found in the fact that the phenomena of sleep and dreams have not been sufficiently considered in their connexion.

I.

The Various Theories of Sleep.

The theories of the nature of sleep are, in fact, numerous. They account for it as *circulatory* (*e.g.*, through cerebral anemia), *neurodynamic* (*e.g.*, through retraction of the neuronic ramifications or by inhibition of the cerebral activity), *biological* (*e.g.*, the sleep instinct of Claparède), *biochemical* (*e.g.*, through carbonic self-narcosis or by the action of ponogenous substances on the nervous centres), *energetic*, the most commonly held, according to which sleep is due to the exhaustion of the nervous energy expended during the day and which is restored during sleep. But all these theories fail through the following methodological principle: they proceed to the study of the nature of sleep without caring sufficiently about one of its fundamental products, which is dreaming, the characteristics of which just this nature of sleep ought to be called on to explain.

Other authors had already observed that none of the above theories could explain how darkness, silence, monotonous sounds, the cessation of interest in everything that surrounds us, cause sleep, and how it is that, *vice versa*, deep interest in a given event can put off sleep for several hours. But nobody has ever noticed the fact that neither of these theories can explain, *above all*, dreams, which denote an intense

psychical activity that all these theories ought, on the contrary, absolutely to exclude.

II.

The Non-Affectivity of Sleep and Dreams.

The mistake has been in the point of departure; that is that the psychical activity has been considered an indivisible whole which sleep ought to suspend *en bloc*, instead of decomposing it into its fundamental elements and examining which of these elements are truly suspended by sleep. Now, if we distinguish, in psychical activities, the two fundamental categories of *affective* activities (including also activities of volition, attention, etc.), and intellective activities properly so called (that is the simple evocations of sensorial elements, images), we soon see that only the first, and not the second, are suspended by sleep.

In other words, the functional rest of the soul during sleep, is only in relation with affective life. And it is natural that it should be so. In fact, however numerous the sensations or the sensorial excitements of the waking state may be, they are *very varied;* none of them, save in exceptional cases, lasts long enough or repeats itself with enough insistence to exhaust the nervous energy of their respective nervous centres; so that, whilst a given system of neurons or nervous centres is in activity for some given sensations or some given sensorial excitements, all the other neurons or nervous centres equally devoted to the setting in activity of purely sensorial elements, are completely at rest, and have consequently more time than is necessary to make up their specific nervous energy, used up in setting in activity preceding sensations or evocations. It is, on the other hand, not the same with affective activity. The daily activity of any individual is, in fact, excited and guided by a very small number of affective fundamental tendencies, which for this reason are, *during the whole day*, incessantly, or almost incessantly, in action: the farmer who cultivates his field with passion, the artisan on piece work, who intensifies his work as much as possible, the business man incited from morning till night by the ardent longing for gain, the scientist who follows with ardour the solution of given problems or the experimental verification of his theories—these all fulfil well the most varied actions, receive the most varied impressions of the external world, and even call up the most rich and changing succession of images, provided them by their experience of the past, but always under the stimulus of their respective pro-

fessional activities. Moreover, in all these individuals there exists not only always active, but also active in a way more lasting and persistent, another affectivity, which is the desire of not deceiving one's self, the fear of not acting in the most effective way, the anxiety to behave in the most becoming manner: this is, in one word, the secondary controlling affectivity, which at every turn holding momentarily in suspense the primary activity which urges to action, constitutes the state of attention with which the action itself is fulfilled, and on which depends the greater or smaller effect of this last.

Therefore, while the restitution of the nervous substance used up during the functional activity can, so far as regards the centres which set in activity the elements purely sensorial, always keep pace with their consumption, even while we are awake, because these centres are alternately in activity and consequently some rest while the others work; on the contrary, as regards centres setting in action the fundamental affectivities of the individual, this restitution cannot be effected during waking hours, because they are *continually, from morning till night, in functional activity.* The restitution can take place for them, only during the suspension of all the affective activity of the spirit, which suspension is precisely what constitutes sleep.

If the psychic functions are composed of an intellective part (sensorial and mnemonic-sensorial) and an affective part, and if only this latter gets tired during the day and rests during sleep, we begin to understand how it is that, also in sleep, one can have an intense psychic activity, constituted precisely of dreams, and how it is that these are so substantially different from the production of the mind when awake.

We will not stop now to examine how, with our hypothesis of a gradual exhaustion of the affective potential energies, which alone are always active during waking time, and with the consequence derived from this, namely, that sleep depends upon the relation between the degree of this potential affective exhaustion and the intensity of the exciting factor, that is, of the interest which the surrounding situation excites at that moment in the individual, are explained the different particularities of the production of sleep mentioned above (hypnotic influence of darkness, silence, monotonous sounds, the cessation of interest in what surrounds us, and, *vice versa*, suspension of sleep following deep interest in a given event). We shall rather set about examining the characteristics which result from our

hypothesis precisely as regards dreams, which are the psychical fundamental product of sleep.

If sleep is characterised principally by "affective silence," that is, by the suspension of all affective activities (including attention, volition, etc.), then one of the first and most fundamental characteristics of dreams will be that they are *not affective*.

This property of dreams is proved, first of all, indirectly, by the fact, already observed by so many authors, that we never dream of that which has most occupied us while awake, but mostly of insignificant or indifferent facts; and it is proved directly by the silence, in dreams, of all our longings and by the indifference with which the dreamer considers the events of the dream, even when they are of such a nature as would, while we are awake, excite in us the strongest emotions, for example when we see before us as dead our dear ones who are still living. So also we feel no shame or remorse when we commit in a dream immoral or even criminal actions; and no feeling of surprise is excited in the presence of the strangest events, as when we dream that we fly in the air or when we hear an animal speaking, nor in presence of the extraordinary metamorphoses which dreams habitually present us.

The want of surprise, the complete absence of remorse or repentance for immoral or criminal actions that we have committed in a dream, the indifference at events which should afflict us deeply, the non-existence of any real and true desire: all this confirms the thesis that the fundamental feature of dreams is, as we maintain, that of being *non-affective*. There is, however, one fact which, at first sight, might seem to contradict it: it is that, as every one knows, many dreams are violently emotional: it is enough for us to remember the commonest nightmares to be persuaded of the powerful emotions of which some dreams are capable. Now, this apparent contradiction disappears if we notice the nature of emotions and their double possible origin. In fact, while when one is awake it is the entering into an intense and unexpected activity by a given affectivity which produces a somatic or visceral orgasm, and this afterwards, according to the celebrated theory of Lange and James, is reflected psychically as an emotion; in sleep, on the contrary, it is the somatic orgasm, a violent physiological perturbation, which is first produced, exclusively as consequent on given cœnesthetic conditions. Thus an emotional state is produced without the previous existence or entrance into activity of any affective tendency; and it is this emotional state, of a purely

somatic origin, that afterwards calls up in the dream the images that are in harmony with it: we do not feel any terror because we are dreaming we have committed a crime, but we dream we have committed a crime because a visceral disturbance of some kind reflects itself in us under the form of a state of anxiety. This, in fact, is what the most clear-sighted psychologists of dreams have already pointed out.

What has made the uninitiated and even some psychologists believe that dreams, far from being non-affective, are on the contrary often affective, is the usual and deplorable confusion, on which we have very often insisted, which is made between affective tendencies and emotions, which are nevertheless substantially different in nature. Now the truth is that the dreams are frequently only *emotional*, and that they are such only from bodily or visceral causes; consequently, they do not imply at all, as initial agent, as *starter*, a preceding affective state. Moreover, the fact that the same degree of visceral trouble causes in a dream a greater emotion than during waking hours, depends precisely because, during the dream, the respective psychical repercussion finds no obstacle in the affectivities or desires which are active while we are awake. In fact, we never, while awake, find a difficult digestion, for example, causing that state of terror which it so often causes, on the contrary, in dreams.

This very emotivity in dreams, so easy and so exaggerated, further reinforces therefore the thesis of their non-affectivity; and this emotivity, co-existing with the absence of true and proper affective tendencies, constitutes, at the same time, the best demonstration that one can wish for of the substantial difference between the nature of the emotive phenomenon and the affective phenomenon.

III.

First Consequences of the Non-Affectivity of Dreams.

The non-affectivity of dreams having thus been proved, all their characteristics appear to us simply so many immediate consequences of this non-affectivity.

The rapid disappearance, for example, on our awaking, of the dream impressions, is the consequence of their having been little or not at all supported, during sleep, by an affective tendency of any kind, because everybody knows that the duration and vivacity of the remembrance of an event

depend upon the intensity of the interest with which we have followed it.

The continual metamorphoses also which the images in dreams undergo are the consequence of the fact that these images have not been kept even a moment before the consciousness by the persistence of some affective tendency which they interest.

From this also is derived the great facility with which induced dreams are brought on. While, during waking time, even the intensest external stimulations such as that of the street or of a storm, cannot detach us from the ideas that we follow with interest, the smallest stimulation, on the contrary, is enough to turn away dreams from one series of images to another, even entirely different.

But the characteristics of dreams which receive their most complete explanation from our theory of non-affectivity are above all the two fundamental ones, which, just because they are fundamental, have attracted in all times the attention of psychologists, and have always appeared to them a great enigma, remaining still unexplained: we mean the incoherence and illogicalness of dreams.

IV.

The Incoherence of Dreams.

If what sleeps during dreams is but the affective part, *ipso facto* there fails to be that evoking, directing, selective, inhibitory and connective action which we have elsewhere shown to be exercised by the affective tendencies on the current of ideas of a man who reasons.

It is useless to bring witnesses forward to prove that this incoherence, this chaos of dreams, has always been the most manifest phenomenon, remarked by all; nor can we here quote examples of dreams without any connexion, order, coherence, such as fall within the familiar experience of every one.

This unconnectedness, this want of order, this supreme incoherence of dreams, are due, we repeat, solely to the fact that, when there comes to be wanting the affective element, which, while a man is awake, is the sovereign moderator and guide of the intellective material, from this very fact there ceases to be any barrier against the rising tide of our memories, which come into action and follow each other up pell-mell, simply by the mechanical association of ideas.

A dream can therefore be defined: an entrance into

anarchical, planless action of sensory reminiscences, consequent on the absence of all active direction.

To this affective inactivity is therefore due this "dissolution of the mental ties," this "series of degradations of the thinking and reasoning faculties," this "suspension of the highest intellectual faculties," that so many psychologists have remarked in dreams.

This proves, moreover, that this "mental tie," this "thinking and reasoning faculty," these "highest intellectual faculties," consist entirely and solely in the evoking, directing, selective, inhibitory, and connective action of the affective tendencies, which are precisely the only psychical activity which in sleep is silent and at rest.

In fact the working of the sensory evocation is perfect. However different in its entirety the dream may be from the real world, all its elements exactly repeat those which are offered us by reality. The aphorism of Hervey de Saint-Denis, "Nihil est in visionibus somnorum quod non prius fuerit in visu," says in substance that the material of mnemonic reproduction is intact and that the mechanism of evocation in itself works correctly in the dreaming as in the waking state. Nay indeed, precisely owing to the absence of an activity which limits itself to evoking only what interests it, inhibiting every other image which it would consider an intruder, the association of ideas is in dreams notoriously much more varied and richer than in the waking state.

But precisely because the mechanism of evocation pure and simple continues working correctly even in sleep, dreams form the most striking proof of the error of the theory of the English associationist school, for which the simple fact of association is sufficient to account for reasoning. Many dreams, in fact, which represent the typical case of an ideation most obedient to the laws of mechanical association of ideas, must at the same time be counted among the most chaotic and incoherent. Classical in this regard, are the famous three dreams of Maury, in which the events are associated and follow each other up simply by the assonance of their respective names.

So that we can draw the conclusion that the most incoherent dream is exactly the one which most nearly approaches a purely intellective process, that is to say, a process of pure mechanical association of ideas, not influenced by the introduction of an affective element.

V.

Illogicalness of Dreams.

If the first fundamental characteristic of dreams, incoherence, flows from the fact that the primary affective tendency is wanting, and consequently also its function of calling up, selecting, inhibiting and connecting the images —which function is the one which keeps up the *thread* of reasoning—their second fundamental characteristic, illogicalness, flows from the fact that the secondary affective tendency is missing, the opposition of which to the primary tendency constitutes exactly the state of attention and gives place to the *critical spirit*.

While we are awake, this secondary tendency, the fear of deceiving ourselves, is continually in action, even more than the primary tendency; it truly has, from morning to night, not one minute of rest. If it was not continually awake, each of our actions would be a mistake, a stupidity; we should follow without any more ado, unchecked, the first casual idea which would present itself to our mind. Now, this is exactly what happens in dreams, in which the entire absence of the critical spirit is derived precisely from the blest tranquillity of the sleeper, who is not troubled by any sentiment of surprise, by any doubt, by any fear of being mistaken.

In the waking state too we often form erroneous or even absurd hypotheses, due to the pure chance of the association which presents them first to our mind, but the apprehension of having deceived ourselves, the surprise we feel at once if they lead to results contrary to our most common experience, hasten immediately to reject them and to invent others in accordance with reality. In dreams, on the contrary, *we never doubt*, whatever may be the contradiction between the images in our dreams and the teachings of our experience.

The extreme illogicalness of dreams is due precisely to this entire want of every doubt, of every fear of deceiving one's self, of all surprise in presence of events which are in striking contrast with all that which the real world presents. We turn upside down, with the utmost freedom, the best-known laws of nature. We are not at all astonished if a dog quotes poetry, if a dead person goes off to his tomb on his own legs, or if a piece of rock floats on water.

Somebody dreams, for example, that he is caught under the wheels of a train, and nevertheless he is not crushed, but is even able to raise the wagon only by inflating his chest: another, without being at all surprised, sees some workmen

occupied in sewing china vases and plates; very common is also the dream in which one flies in the air as easily as one walks in the street. Mach sees in a dream, without being at all astonished, some water coming out from a mill by a canal, and then flowing back of itself towards the same mill; and in another dream he sees a candle, immersed in a glass of water, burning tranquilly, and the products of this combustion coming away from the flame in the shape of bubbles of air, and rising to the surface.

By the very absurdity of their deductions, these dreams serve capitally to put well in evidence the fact that illogicalness consists only in attributing to an imagined experience or fact results or consequences different from those which are given us by past experience; if one immerses, for example, a lighted candle in water, it goes out; Mach, on the contrary, illogically imagines that it continues to burn. These illogical dreams show distinctly at the same time, that the want of every feeling of surprise in the presence of such absurd results, of every doubt or fear of having deceived ourselves, and consequently the absence of all critical spirit, is precisely what allows these illogical deductions to come forward and hold their place before the consciousness, while, if the secondary affectivity existed, to each of these absurd results would be opposed, as efficacious agents of inhibition, all the "antagonistic images" with which experience furnishes us, and which this secondary affectivity would then call up and sustain.

If then the incoherence of dreams is due to the want of a primary affectivity which would follow with interest the object whose vicissitudes we imagine, their illogicalness, on the other hand, depends on the absence of the secondary affectivity, which controls the respective results that we imagine must be the consequence of each of these vicissitudes. And the absence of the primary affectivity, which is the cause of the incoherence, together with the absence of the secondary affectivity, which is the cause of the illogicalness, are only the immediate consequence of the *non-affectivity* of dreams, that is, of the state of functional rest in which is the affective soul of a sleeping man, while the purely intellective part, of calling up sensations and images, persists, one may say, in the same activity as in the waking state.

The questions set in 1885 for a public competition, by the Académie des Sciences Morales et Politiques of Paris, on "The Theory of Sleep and Dreams," were: 1. "Which faculties of the soul subsist or are suspended or considerably changed in sleep?" 2. "What is the essential difference

between thinking and dreaming?" To the first of these questions we can therefore reply that in dreams the purely intellective faculty of recalling sensorial images continues to subsist, while the affective faculty is suspended; that consequently dreams are the result of *an affective functional rest not accompanied by a corresponding intellective functional rest;* in other words, they are *an ideative anarchy consequent on the cessation of all affective control.* To the second question: that thinking or reasoning is following with interest the history of an object which we imagine we cause to undergo a series of experiments, being careful to attribute to each experience the results already arrived at in the past by similar experiments, and to which these would now lead if they were actually carried out instead of being simply thought of, which implies a continual action of calling up, selecting, co-ordinating and controlling on the part of the relative affective tendencies; while dreaming is letting the mnemonic reproduction of sensorial elements get full mastery, precisely because of the silence of every affective tendency, which implies the chaotic calling up of images, in the most incoherent and illogical way, by the simple casual operation of the mechanical association of ideas.

V.—CRITICAL NOTICES.

Implication and Linear Inference. By BERNARD BOSANQUET. Macmillan. Pp. ix, 180.

THIS little book, whose value is altogether out of proportion to its size, contains the clearest and most plausible account that Prof. Bosanquet has yet given of his views on logic. The author has made a careful study of recent writers whose general position differs considerably from his own, such as Dr. Mercier, Husserl, and Mr. Leonard Russell; and much light is thrown on his own system by his discussion of theirs. In particular it is pleasant to see that at least one English philosopher of eminence recognises the importance of Husserl's work, which has been strangely neglected here, possibly on account of its extreme prolixity and its barbed-wire entanglement of new technical terms.

Prof. Bosanquet is concerned to maintain that inference is everywhere of the same general type, and that it is not subsumptive or syllogistic. The true type is explained under the name of *implication;* subsumption he calls *linear inference,* and condemns as a 'second-hand' process of argument. The book falls into three closely connected parts. Chapters I., IV., V., and VIII. explain the nature of implication; and exhibit its connexion with induction, judgment, supposition, and the contrast between the necessary and the contingent. Chapters II. and III. deal with the linear view of inference, and claim to show that most of the critics of the syllogism have never freed themselves from its domination. Chapters VI. and VII. deal with points that are somewhat less vital to Prof. Bosanquet's argument, *viz.*, the constant use of sets of three terms or propositions in inference, and the question whether logic has any special connexion with the study of minds and their processes.

The essence of this theory of inference seem to be the following. We start with some complex of related terms. This may either be actual or merely supposed. The relating relation that characterises this complex will be such that each term in the complex is relevant to all (or, at any rate, to many of) the other terms. Such complexes are what Prof. Bosanquet means by universals. I may remark, in passing, that this explains, as I had long suspected, why Prof. Bosanquet asserts many propositions about universals which seem to people brought up on a different nomenclature to be patently false. What he says about universals is both true and important when the name is understood in his sense, and false

when it is understood in the sense of *abstractum*. The only ground of quarrel that remains is that he seems to deny that universals, in the latter sense, are also real and important; but this is a matter that concerns his large *Logic* rather than the present work. Still, even when it is understood that universals are to mean complexes, it seems to me that Prof. Bosanquet's theory requires universals in the sense of *abstracta*. For I imagine that what is important is, not some one particular complex, but the characteristic type of structure of all the possible complexes of a class. This, I think, is implied by the fact that what we should commonly call the *same* complex varies its terms and their relations, within limits, in determinate and interconnected ways. This is assumed by Prof. Bosanquet, and seems to imply a contrast between the permanent general type of structure—an universal in the sense of an *abstractum* —and the determinate complex as it is at a given moment (if it be in time) or distinct instances of it (if it be timeless, as in geometry), which are universals in Prof. Bosanquet's sense.

Implication is defined as the relation which subsists between one term or relation in such a complex and the rest, in so far as their respective modifications afford a clue to one another. The position then is that if one term or relation in a complex of a certain general structure varies (presumably within the limits required for the complex to remain of the same structure), there will be correlated variations in some or all of the other terms and relations. It appears from the definition that this state of affairs is not itself implication, but is only a precondition for it. For implication it is not enough that modifications in different parts of the complex should in fact be correlated, they must further be so correlated that one 'affords a clue to' the other. Prof. Bosanquet thus agrees so far with logicians of the Russell-Whitehead type as to regard implication as a relation between terms which subsist whether a mind recognises it or not. He differs in so far as they make implication a very special relation that holds only between *propositions*. It is doubtful whether this difference is very important. I take it that the connexion between the two senses of implication is this. The proposition that asserts that such and such a term or relation in a certain complex is modified in a certain way is connected by 'implication,' in the Russell-Whitehead sense, with a proposition asserting that some other term or relation undergoes a correlated variation. The connexions of the actual terms or relations in the complex, in virtue of which the two propositions imply each other in this sense, are 'implications' in Prof. Bosanquet's sense. Thus the connexion would seem to be that Prof. Bosanquet's implication is that relation within a factual complex which is the factual correlate of implication, in the Russell-Whitehead sense, between propositions about terms or relations within this complex.

We next come to Prof. Bosanquet's use of the word *inference*. This seems to be bound up with a special theory as to the precise way in which inferences are made. His view is the following, if I

have rightly understood him. It is a contradiction in terms to hold that no proposition is true, or even to doubt all propositions. But it is perfectly possible to deny or doubt this or that proposition. Inference consists in transferring the certainty which we have that there are *some* true propositions to the truth of *this or that* proposition. All arguments thus finally come down to the form: Either p is true or nothing is true. We start from the idea of some definite restricted complex, which may or may not be actual. Within this conclusions emerge whose rejection would 'shatter' the experienced world. Thus two wholes are involved in any inference:—the restricted complex with whose terms and relations you are explicitly concerned, and the total character of reality. Your conclusion is *based on* the restricted complex, but you can only *draw* the conclusion by 'applying the complex . . . to the reality which survives and transcends any modification introduced by the complex'. Another way of putting it is that we make a joint system of the restricted complex and the rest of reality and read off the implications from it.

All this is highly figurative, and it is necessary to discuss its precise cash value. (i) If Prof. Bosanquet's view of inference is to be taken literally he has replaced the categorical syllogism as the type of all inference by a certain mixed disjunctive syllogism. This syllogism has, in all arguments, ultimately the same proposition for the second alternative in the disjunction, *viz.*, the proposition: No propositions are true. The categorical premise is ultimately the same in all arguments, *viz.*, the denial of this alternative. (ii) This would seem to involve the view that one formal principle at least is recognised on its own merits as absolutely true, *viz.*, the proposition: If p or q, and not $-q$, then p. For, otherwise, a person might admit both that if p is false, everything is false, and that the latter is impossible, and yet refuse to admit that this implies p. (iii) It is also necessary to assume the non-formal principle of inference, first explicitly recognised by Frege. Otherwise we cannot pass from recognising that the premises imply the conclusion, and asserting the premises, to asserting the conclusion by itself. (It is no answer to this to remark that in fact p is connected with q, etc.; that therefore it is a fiction to say that we finally assert it by itself; and that there is thus no need of the non-formal principle to justify this procedure. This answer would rest on the fallacy of confusing the two statements: I assert that (p is true in isolation from the premises) and I assert p, in addition to asserting the premises and the implication. I do not assert the former; but, whenever I infer p, I do pass from merely asserting the premises and the implication to asserting p itself in addition. And this needs justification. I seem to have met traces of this confusion in Prof. Bosanquet's large *Logic.*) (iv) Prof. Bosanquet might urge that he does not make use of the *general* formal principle: If p or q, and not $-q$, then p. He might say that he only needs the more restricted principle, in which

q is, not *any* proposition, but the particular one that no propositions are true. And he might say that the restricted principle is justified on exactly the same grounds as justify the denial that no propositions are true. If so, a person would be inconsistent in accepting the categorical minor and denying the implication between the two premises and the conclusion. Let us consider this position. Prof. Bosanquet holds that to deny all truth is not merely practically barren but that it is logically refutable. Such scepticism contradicts itself. I do not see why this should move the sceptic, unless he voluntarily adopts the silly attitude of combining a belief in the law of contradiction with a denial that any proposition is true. Thus I conclude that Prof. Bosanquet must accept the law of contradiction on its own merits; for clearly it is circular to accept it on the ground that the rejection of it would be self-contradictory. But, if the ground for denying that all propositions are false be the law of contradiction, it cannot be maintained that we have the *same* ground for believing 'If p or q, and not $-q$, then p' and for believing 'not $-q$,' where q is the proposition that there are no true propositions. For the law of contradiction alone will certainly not guarantee the former principle; since the law is only about any proposition and its contradictory, whilst the principle is concerned with pairs of propositions, of which the first may be about anything, and the second, being the statement that all propositions are false, is not in general the contradictory of the first.

It thus appears that, even if we accept Prof. Bosanquet's view that all inference in the end comes down to showing that unless p be true nothing can be true, a number of principles must be assumed simply on their own merits and not because of their coherence or lack of coherence with anything else. These include at least the law of contradiction, which is needed to guarantee the minor; the principle of the mixed disjunctive syllogism; and the non-formal principle of assertion. I do not really know whether Prof. Bosanquet needs to deny this. It is verbally indeed at variance with the general spirit of his writings; but it seems to me that he has only to say that such principles can be 'read off' from the system of reality as a whole, or from *any* subordinate system in it, whilst other kinds of implication are bound up, in part at least, with the particular structure of particular subordinate complexes. Possibly this is what he does mean, but I do not think he has made his position very clear on this matter.

But is it really true that all inference ultimately involves the disjunction: Either p is true or nothing is true? I find this very difficult to believe. I do not think Prof. Bosanquet can mean to assert that we could show in detail, *e.g.*, that unless the space of ordinary life had three dimensions Julius Cæsar would not have been bald. Thus he must be able to know in some *general* way that the falsity of a given proposition implies that of all propositions, without going into detail. What he appears to mean is that

we can show that if p were false some fundamental principle, such as the law of contradiction, which pervades all reality, would be false. We must remember that he is dealing with implications within subordinate systems, and so his view would be most fairly represented by putting it in the form: If the part B of the system S did not have the modification μ_b when the part A has the modification μ_a some all-pervasive and fundamental proposition about reality as a whole would be false, and, if this were so, nothing would be true. If this be the right interpretation his theory of inference contains two apparently separable steps: (i) the argument that if so and so were not true some fundamental proposition about reality would be false, and (ii) the argument that in this case nothing would be true. The two steps are not separately stated, and I cannot help suspecting that this covers one or both of two possible confusions. The first is this. It is possible to confuse (*a*) all propositions about reality, with (*b*) propositions about all reality. The laws of logic seem to be propositions of the latter kind, in the sense that they apply to and are true of reality as a whole and also any part of it. If (*b*) be confused with (*a*) the second step of the argument follows automatically from the first. I strongly suspect the presence of this confusion in several places. The other possible fallacy is this. The law of contradiction is supposed to guarantee in a special way that not all propositions are false. It is easy but fallacious to pass from this to the view that, if the law of contradiction were false, all propositions would be false. Now the law of contradiction is a fundamental and pervasive proposition of the kind mentioned in the first step of the argument. Hence a logical fallacy of the sort just mentioned would lead naturally to Prof. Bosanquet's result. The argument would be: 'If p is not true then the law of contradiction (*e.g.*) is not true, but if the law of contradiction is not true nothing is true. Hence if p is false nothing is true.' But at most what we know is that if the law of contradiction is true something is true; and it does not follow that if the law of contradiction is false nothing is true; all that would follow is that two contradictory propositions might both be true.[1]

Thus I cannot see any reason to believe that all inference ultimately rests on the disjunctive: Either p is true or nothing is true. And this distresses me the less because it is gravely doubtful whether the statement, *Nothing is true*, is either true or false. In actual fact this set of noises or marks does not stand for any proposition at all; for the theory of logical types condemns such expressions as meaningless. Thus it would be unfortunate if all inference really did depend on a disjunction, the second member of which is not a proposition at all, but a mere noise like *Jabberwocky*.

I am strongly inclined to think, therefore, that all that Prof.

[1] Doubtless if the law of contradiction were false we could not *know*, of any other proposition, whether it were true or false. But this is very different from knowing that all other propositions are false.

Bosanquet really means is that all inference involves in the end an argument of the form: If *p* were false then some proposition which is true of the whole of reality would be false. I am compelled to regard his actual statement that, if *p* were false, then no proposition would be true, as either a rhetorical expression of this or a mistaken inference from it.

I am encouraged in this belief by the fact that nothing stronger than my statement of his position seems to emerge from the interesting discussion in Chapter VIII. on supposition and the views of Mr. Leonard Russell. Prof. Bosanquet's argument here is that, however much you may explicitly suppose, you can do nothing with your suppositions in the way of drawing conclusions unless you *assert* (and not merely *suppose*) the law of contradiction (and presumably other principles of pure logic). And these are laws pervading all reality. He also argues that when the conditions of a judgment are once made explicit 'it is absolute in its challenge to reality'. 'Its truth then depends on the absence of hidden obstructions in the universe of unknown reality.' Thus, here at any rate, the connexion with reality that is demanded is not: 'This true, or *nothing* true,' but: 'This true, granted the absence of obstacles, or *the laws of logic* would be false'.

Prof. Bosanquet seems to me to be right in his main contention about supposition. Stated in terms of Mr. Bradley's distinction between premises and principles, the first part of his view might be expressed as follows: Your *premises* may be merely supposed for the sake of argument, but, if you are going to make any use of them, your *principles* of inference must be not merely supposed but asserted. This seems to me to be true; and it is not in any way altered by the fact that all the conclusions reached in systems of supposals are hypothetical. No doubt they are; *e.g.*, the propositions of any system of pure geometry are hypotheticals with the postulates as antecedents. Nevertheless there is assertion; for these hypotheticals themselves are not merely supposed but are positively asserted. It is their antecedents and consequents, taken separately, that are only supposed and not asserted. And you clearly cannot get assertion (even of hypotheticals) out at the end, if nothing but supposition is put in at the beginning. This I take to be what Prof. Bosanquet has in mind when he says that a judgment, whose conditions are once made explicit, is absolute in its challenge to reality. His second contention about supposition is less clear to me. If, in a certain system of suppositions (say, the postulates of Euclidean geometry), I can prove by the laws of logic that the postulates imply a certain proposition, *e.g.*, I. 47, what 'hidden obstacle' can there be in the rest of reality to prevent the hypothetical: 'The postulates imply I. 47,' from being true? No doubt there might be 'hidden obstacles' (*e.g.*, the non-Euclidean character of physical space, if this has any definite meaning and were a fact) to the truth of the postulates or of I. 47, taken separately. But, so long as I recognise that the postulates are only supposed, I

am not attempting to assert them or to assert I. 47. And such obstacles are perfectly irrelevant to the truth of all that I do assert, *viz.*, that the postulates imply I. 47. No doubt Prof. Bosanquet is here thinking of much more concrete systems of supposals, as his example about driving to Hampstead shows. It is obviously true that much more has to be supposed in such cases than is ever made explicit, *e.g.*, the constancy, in the main, of the ordinary laws of the material and mental worlds. The result is that your hypotheticals *are* only true subject to conditions that are not contained in their explicit antecedents. But I do not see why Mr. Leonard Russell's remedy, of supposing more, will not work here; though I do see that it will not do as a substitute for actually asserting the principles of inference.

We have now discussed Prof. Bosanquet's views about supposition, and have tried to understand what he means by implication and by inference. And we have argued that his statements about the latter must be interpreted in a much restricted sense if they are to be plausible. We have not yet seen clearly how he supposes inference—defined as the process of conferring the certainty that there is *some* truth on to some definite proposition—to be connected with implication in his sense of the word. The chief source of information on this point is Chapter IV., where Prof. Bosanquet gives a large number of examples, ranging from mathematical proofs, through inferences about social and physiological matters, to judgments of value. The principle, he says, is the same throughout as that which is involved when we argue that $2 \times 2 = 4$ or that equilateral triangles are equiangular. It is that, 'within any complex of terms and relations which is distinctly before our apprehension, connexions can be seen as between antecedents and consequents, which are necessary and relatively *a priori* so long as that complex is assumed'. In Chapter I. it is said that, even if there be no process of argument (as where we convince ourselves that two straight lines cannot enclose a space) there is something like inference. But more usually we have to 'build up the system' and then 'read off' the implications. Apparently inference is the act of reading off the implications after scrutinising the system that we are dealing with and viewing it in relation to the wider system of reality as a whole. If we can 'read off' straight away the inference is immediate; if we have first to build up the system before being able to read off the implications it will be mediate. *All* implication, we are told, is logically *a priori*. The question of our actual degree of certainty in any case depends on the distinctness of the structure of the subordinate system in itself and in its relations with the ultimate whole. Those propositions to which the name *a priori* is commonly confined are propositions in which the simplicity and abstractness of the relation concerned makes it specially easy to read off the connexion. But we are told that, in other cases,—notably religious and moral matters—what is lost in simplicity and abstractness may be gained in depth.

I must confess that I have considerable difficulty in seeing the precise connexion between the various parts of this theory. Let us begin with the statement that all implication is logically *a priori*. So far as I can see *a priority* is never defined. But evidently propositions like $2 \times 2 = 4$ are supposed to be examples where it is so clearly present that it is falsely thought by most people to belong only to them. Now I suppose that the peculiarity of such propositions is that, when you understand and reflect upon the terms and their relation, you see in the end that those terms must be related by that relation. And we do not seem to see anything of the kind when we reflect upon humanity and mortality, or on silver, increase of temperature, and increase of length. Now I take it that *part*, at any rate, of what Prof. Bosanquet wishes to assert is that this is only a difference *quoad nos*, and not a difference in logical character of the propositions $2 \times 2 = 4$ and Silver expands when heated. The subjects and predicates of propositions which are only proved by induction are bound together in reality in just the same way as those of 'self-evident' propositions. It is only a difference in the complexity of the subject-matter or some peculiarity of our place in the world that makes the apparent difference between them. This, I think, is certainly part of Prof. Bosanquet's contention; and this seems to be borne out by his rejection (in Chapter IV.) of the Leibnitzian distinction between laws that hold in all possible worlds and laws of the actual world.

Now this may perfectly well be true. I am quite sure that we always *mean* by a law of nature, such as All S is P, something more than the merely numerical proposition that 100 per cent. of S's are P's. It seems to me possible that laws of nature assert connexions between certain *bundles* of universals (in my sense, not Prof. Bosanquet's) and other universals or bundles of them; whilst laws that appear to be specially *a priori* assert connexions of precisely the same logical kind between single universals or very small bundles of them. On this view the contingency of the laws of nature does not depend on anything peculiar in the *connexion* asserted, but on the fact that it is contingent that there should be instances of just these bundles. Man and silver are highly complex bundles of universals, and it is contingent that there should be instances in great numbers of just these bundles; but it may be that the connexion between such bundles and mortality or expansion on rise of temperature is as necessary as that between 2×2 and 4. If Prof. Bosanquet means something of this kind I am not indeed sure that he is right, for I find the whole subject excessively difficult to make up my mind about; but I think he very well may be right.

But clearly, even if this be part of what he means to assert, he means much more than this. His theory is not only or mainly about the nature of the propositions which we finally reach, but about the processes by which we reach them and the attitude that we finally take towards them. And here I do feel difficulties. We

do 'read off' laws from certain systems after 'applying to them' the rest of reality and viewing them in their relation to the latter. I can ascribe meanings to this both in the case of mathematical reasoning, and in the case of induction; but unfortunately they do not seem to be the same meaning. In what is ordinarily called a purely deductive argument the system that we start with is defined by the postulates. A system of pure geometry, treated by the method of Veblen or of Whitehead, in his *Mathematical Concepts of the Material World*, seems to bear a very close resemblance to Prof. Bosanquet's partial system. We start with one fundamental relation (*e.g.*, between) and lay down its properties in our fundamental postulates. Then we 'apply' the rest of reality to it, in the definite sense that we argue from these postulates by using the laws of logic, which are laws of all reality. And there is a perfectly clear sense in which we may be said to 'read off' our results from the joint system composed of our partial system and the rest of reality. We do see the connexion between the postulates and the propositions of the system of geometry by viewing the two in their logical interrelations under the guidance of the laws of logic; and this vision in the end is a kind of immediate insight, however much mediation may have been needed to put us into a position to see these connexions.

Now let us consider inductive arguments. With nearly all that Prof. Bosanquet says in his many excellent examples I agree heartily. Induction by simple enumeration, eked out to the maximum possible extent by the laws of probability, *is*, I agree, worthless. And, in the hypothetical method, we do not put forward hypotheses *in vacuo*, but start with very definite views as to what types of hypotheses are admissible in a given subject-matter. This restriction is based on what we believe ourselves to know about the general 'make up' of the physical world and of the special peculiarities of the region of phenomena under discussion. Anyone can see this for himself, *e.g.*, who compares Mill's Methods, as offered, with the actual processes of argument that one uses in a chemical or physical laboratory. And the case is strengthened by negative instances. Why is Psychical Research so excessively difficult and unsatisfactory? Because we have at present no idea what hypotheses are reasonable and what are not, as Mr. Bradley pointed out in his classical article on the subject many years ago. Psychical Research illustrates another important contention of Prof. Bosanquet's extremely well. He says that in most inductions you cannot make a sharp separation between the particular facts of observation and the general structure of the system under investigation. Now this is exactly illustrated by Psychical Research. Everybody accepts observations by competent physicists, even if they seem to be startling and revolutionary. We feel sure that they will fit into the system somehow and that the methods used are appropriate to the investigation of physical systems. But people view even the alleged *facts* of Psychical Research with a

scepticism that they never think of applying to ordinary physical phenomena. No one makes it an objection to photography that, at a certain stage, the operator goes and muddles about in a highly suspicious way in a dark room into which nothing but red light, and not much of that, is admitted. But we feel that precisely the same circumstance makes very much against Dr. Crawford's experiments with Miss Golligher on telekinesis. The reason is obvious. Photography does and telekinesis does not fit in with our view as to the general 'make up' of nature; we understand why a plate must be developed in red light and semi-darkness; we do not see why Miss Golligher could not move tables without contact under an arc lamp. [I ought perhaps to add that I use these illustrations simply to bring out Prof. Bosanquet's points, and not to condemn Psychical Research. Its special difficulties ought to act as a challenge to scientists; and I have not the slightest sympathy with the ignorant pontifications of biologists of the Ray Lankester type, or with the more respectable but to my mind equally mistaken objections of the Dean of St. Paul's, who seems to think it a sufficient reason for not pursuing the subject that mediums are often of doubtful moral character, that the results do not point to a particularly cheerful or desirable kind of future life, and that psychical research (in common, I may remark, with alcohol, tobacco, politics, and religion) is liable to have bad effects on persons of weak nerves and intellects.]

The sense then in which we view our partial system in its relations with the whole and read off our implications from the joint system is, in inductive matters, the following. We believe ourselves to know a good deal about the 'ground-plan' of the region of phenomena,—electricity, life, etc.—of which we are investigating a particular instance. We also believe ourselves to have a sound general knowledge of the ground-plan of the physical world as a whole, of which this special region forms a part. This knowledge suggests hypotheses to us and limits very greatly the hypotheses that seem worth consideration. And, unless this were so, induction would be impossible. Now Prof. Bosanquet evidently regards *this* process of forming a joint system and reading off implications as being essentially the same as that which we have already illustrated in purely deductive sciences like pure geometry. I should very much like to believe that he is right, but I do not feel at all certain that he is. Most of the supposed knowledge, that is always at the back of our minds, about the general ground-plan of our particular region and of nature as a whole, has been handed down to us from earlier investigators. No doubt each generation has added something to it, and we may hope to pass it on to our scientific descendants in a slightly purer and deeper form. But I cannot see that ultimately it rests upon anything but induction by simple enumeration, or that now or at any past stage it has had a trace of the self-evidence of the laws of logic or of pure mathematics. I grant at once that at no stage have men in fact

argued explicitly from simple enumeration alone or put forward hypotheses freely *in vacuo*. But I should suppose that the cause of this is that, long before scientific investigation started, and probably in a pre-human stage, fixed ideas (though very crude ones) as to the general ground-plan of nature were formed in us by the actual preference which nature has so far shown for a comparatively few kinds of substances and for a comparatively regular behaviour. I am not making the mistake of arguing that because our beliefs started in this way they are false. All that I assert is (*a*) that this seems sufficient to explain how we have come to be in a position to make inductions, and (*b*) that when we come to scrutinise the results from a logical point of view we can see no self-evidence in them, and no evidence for them except induction by simple enumeration, concerning the weakness of which I entirely agree with Prof. Bosanquet.

I suppose that Prof. Bosanquet would answer that you cannot expect these more concrete laws to get the same clear self-evidence as the highly abstract principles of logic and mathematics, but that what they lack in clearness they gain in depth. I am not at all sure that I understand this doctrine; which also appears in the earlier chapters of Mr. Bradley's *Essays on Truth and Reality*. In some places Prof. Bosanquet seems to argue that mathematical propositions gain their clearness from the fact that to deny them involves almost at once a denial of the law of contradiction. But obviously this cannot account for the kind of certainty possessed by the law of contradiction itself, or by those other principles of formal logic which have to be used in proving that the denial of any given proposition p (other than the law of contradiction) would lead to a denial of the law of contradiction. Yet this is precisely the kind of certainty that mathematical axioms themselves seem to possess. Since then there is a whole class of propositions which are certain, and whose certainty *cannot* be due simply to the fact that the denial of them leads in a few steps to a contradiction; and since mathematical axioms seem to possess exactly the same kind of certainty as these propositions; it seems doubtful whether the certainty even of the latter can be explained as Prof. Bosanquet claims to explain it. As to the other propositions, whose denial does not lead immediately to contradictions, but to the rejection of something 'deeply rooted' in reality, I am not quite sure what is to be said, because I do not clearly understand the phrase 'deeply rooted,' which is of course metaphorical. Does it simply mean that we should have to reject a great many interconnected propositions that we do not think of doubting? If so, the question will be: Do these propositions, however numerous and closely connected, seem to be so obviously true that it is impossible to reject them? After all, there are wide systems of mutually confirmatory errors; it would be highly uncomfortable to have to give them up, but this is not a logical ground in their favour. Or do 'depth' and 'rootedness' have some other meaning? I suspect the moralistic flavour

of these phrases, and cannot help wondering whether it may not lead to the fallacy of supposing that, because certain propositions have ethical value, they must *ipso facto* have truth-value too.

It may be said that all the criticisms that we have passed on Prof. Bosanquet's theory of inference are really refuted by him in Chapters II. and III., where he deals with the linear conception of inference. Let us now turn to this subject. Prof. Bosanquet holds that the people who think the syllogism the only or the main type of deduction, and the people who base induction on simple enumeration, commit two forms of a single fallacy.

(i) *Syllogism as the type of all deductive reasoning.* Prof. Bosanquet makes two objections. (*a*) The syllogism will not allow you to particularise your predicate as you learn more about the details of the subject. Yet we constantly do this in deductive arguments. He instances the deduction of the moon's motions from the law of gravitation. Here, I think, he is certainly right. But he does not tell us in detail what the line of argument is here. It is therefore possible that he is right in denying that it is syllogistic and wrong in holding it to be an instance of inference in his sense. It will be worth while then to consider what we really do when we deduce the moon's motions from the law of gravitation. In the first place, I suppose that the argument does have one characteristic that Prof. Bosanquet objects to in the syllogism; it does use a 'borrowed premise'. A person working out the moon's motions does now take over the law of gravitation as an otherwise established fact, and does not 'read it off' from the moon's motions. We also 'borrow' the laws of motion, the laws about the composition and resolution of forces, and the rules of arithmetic, algebra, and the calculus. The peculiarity of the reasoning is that one premise, the law of gravitation, states a quantitative relation between *any* values of three sorts of variables, *viz.*, any pair of masses, any distance, and the mutual accelerations. The 'predicate' is able to be 'particularised' in accordance with the special character of the 'subject' because the premise is about the *correlated values* of sets of variables; whilst, in the ordinary syllogism with a major like All M is P, the major is simply a statement about a *conjunction* of attributes, with no information about their correlated values.

The principle of reasoning used is that what is true for *any* values of a set of variables is true for definite given values, such as the masses of the moon and earth, and their distance. The detailed deduction is carried out by using the laws of motion, themselves propositions of the same peculiar kind as the law of gravitation; and arguing in accordance with the laws of pure mathematics. Certainly this is not syllogism, but it seems equally unlike inference in Prof. Bosanquet's sense. It uses borrowed premises; it argues in accordance with self-evident formal principles; and—in so far as one can talk about subjects and predicates at all—the principle according to which the predicate is varied to fit the variations of the subject is part of the content of the premises.

How is this process related to syllogism? Prof. Bosanquet quite truly says that it is a mistake to suppose that the formal principle of the syllogism is used as a premise in particular syllogisms. He is also quite right in saying that in any particular syllogism we can see the connexion between premises and conclusion directly without appeal to such a formula as M*a*P . S*a*M .) . S*a*P. Thus the formal syllogism in Barbara is in general used neither as a premise nor as a principle for any particular syllogism in Barbara. Yet there is a certain analogy and a certain difference between the process of argument in the syllogism and in the determination of the moon's motions from the law of gravitation. The analogy is this. In the argument about the moon's motion an essential step is to substitute definite particular values for the variable masses and distances whose mode of correlation is stated in the law of gravitation. In the syllogism to prove that Socrates is mortal from the fact that all men are so it is indeed neither necessary nor as a rule desirable to appeal to the general formula M*a*P . S*a*M .) . S*a*P. It is not necessary, because the particular case is as evident as the general formula; it is not desirable, because to most men the general formula is less evident than the special case. Nevertheless, if we were asked: Why is the argument about Socrates valid? our natural reply would be that it is so because the argument is of the form M*a*P . S*a*M .) . S*a*P. And by this we mean that it is got by substituting the particular values man, mortal, and Socrates for the variables M, P, and S respectively in the general law. So far there is analogy. But, if we look more closely, we shall also find difference. The law of gravitation is just a premise, not a logical principle of reasoning. Substitution of constant values for the variables in it is a step in the reasoning. But the complete formal Barbara is not a premise for the conclusion that Socrates is mortal; it is a principle exemplified by the particular syllogism about Socrates. Thus the function of substituting constants for variables is quite different in the two cases. In the argument about the moon's motion it is a step that actually has to be performed in the course of the proof if the conclusion is to be reached. In the syllogism about Socrates it is not a step *in* the proof but an additional statement, which may or may not be made, *about* the proof.

(*b*) Prof. Bosanquet's other objection to the syllogism is that it borrows its premise by assumption or from a previous argument. We have just seen that this is not a *special* objection to the syllogism. Surely every argument of any complexity has to borrow premises from many sources. It seems to me, *e.g.*, that every particular application of induction borrows a whole view of the general make-up of the physical world. Surely Prof. Bosanquet does not maintain that, whenever we make an induction, we see with direct insight for ourselves that general ground-plan of nature, which he rightly insists that we use, but which has certainly been handed down to us from the reflexions and inductions of previous scientists.

(ii) *Induction and the Syllogism.* Prof. Bosanquet's reason for holding that the current theory of induction involves the same fallacy of linear inference as the current theory of deduction seems to be as follows. This theory of induction starts by observing conjunctions between particulars A_1 and B_1, A_2 and B_2 . . . A_n and B_n. It then formulates a general law connecting A with B. And it then professes that all further anticipation about future A's and B's or inference about past or distant ones is made by subsumption under this law. The law, supposed to be established by induction by simple enumeration, is thus simply 'borrowed' in dealing with any subsequent particular case, and the particular case is subsumed under it. Prof. Bosanquet's alternative is well summed up in the following quotation: 'The difference is that between going from a presupposed connexion to a new case taken to fall under it, and determining a conclusion from a system of relations which, *in the moment of determination*, is apprehended as making it inevitable' [p. 24. My italics]. So far, the connexion between traditional induction and linear inference seems to consist, not in an analogy between these processes themselves, but in the fact that the results of induction are used as major premises for syllogisms. *Any* view of induction that makes it establish general laws, by whatever means, might lead to this result over the subsequent application of the laws. But Prof. Bosanquet means to assert more than this; he thinks that the *special* theory that induction proceeds by analogy or simple enumeration reduces induction itself to linear inference. Moreover, the quotation just given strongly suggests that he does not think that the object of induction is to establish general laws, but rather to exhibit directly the connexion of particular cases. If this be so the subsequent linear application of inductive results *may* fairly be laid at the door of the traditional theory of induction itself; for, if that did not (erroneously, as Prof. Bosanquet would hold) claim primarily to establish general laws, it would be under no temptation to be lured afterwards into syllogism and linear inference.

Now I must confess that it seems to me perfectly clear that induction—and not any special theory about it—does claim to establish general laws and not to offer direct insight into special cases. And it seems to me equally clear that we do afterwards 'borrow' these laws and use them deductively for dealing with special cases. The sciences of physics and chemistry, *e.g.*, are full of general laws such as Maxwell's Equations, Ampère's Rule, Lenz's Law, the Laws of Reflexion and Refraction, and so on *ad nauseam*. And in dealing with special cases we do 'borrow' these laws and argue deductively from them and the special values of the relevant variables which determine our special cases. The example discussed above about the law of gravitation and the moon's motions seems adequately to illustrate this. I admit that no theory of induction that I am acquainted with seems to me to explain satisfactorily how induction justifies our strong belief in such laws.

But it does seem to me (*a*) that if they be not somehow established by induction they are not established at all, and (*b*) that if induction does not somehow establish such laws it does nothing.

Having said so much I shall be asked how I propose to meet Prof. Bosanquet's criticisms. I meet them largely by agreement and partly by drawing certain distinctions. (*a*) The laws are not used as major premises of syllogisms, but in the way illustrated in the discussion of the moon's motions. Thus the objection that syllogism will not modify 'predicates' to fit the special peculiarities of special 'subjects' becomes irrelevant. (*b*) This peculiar *use* of the laws is rendered possible by their special *nature*. They assert, not mere conjunction or disjunction of attributes, but correlations between the values of certain sets of variables. (*c*) Such laws evidently cannot be established by the mere noticing of likeness and difference. Thus all that Prof. Bosanquet has to say against this as the fundamental process of induction has my hearty agreement. They are established by something like the Method of Concomitant Variations. This method, the only one of Mill's which really is inductive and does not simply consist of mixed hypothetical syllogisms with the definition of cause and effect as the hypothetical major, is *the* method of all advanced sciences. (Mill's account of it, as a weakened form of Difference is of course preposterous; if the two are to be compared at all Difference should be regarded as a very special case of Concomitant Variation.) There is a genuine connexion between the induction that only argues by analogy and the linear inference that can only use syllogism. The connexion is that induction which only proceeds by likeness and difference can at most establish laws of the mere conjunction or disjunction of attributes, and no use can be made of such laws except as majors for syllogisms. But there *are* other kinds of laws, and these are reached by another kind of induction, and can be used as premises for another kind of deduction. Lastly (*d*) there no doubt is such a thing as that immediate insight into special cases and special regions of which Prof. Bosanquet makes so much. The argument about $B > C . A > B . \supset . A > C$ is seen to be true with the same certainty as $MaP . SaM . \supset . SaP$. It is therefore futile, even if it be possible, to throw such arguments into syllogistic form. The difference between such arguments and, *e.g.*, syllogisms can be put quite simply and clearly. The relations which occur in the premises and conclusion of a syllogism are *logical* relations, *e.g.*, that of class-inclusion. The relations that occur in the argument about A, B, and C are not logical relations, because the entities that they relate are of a more special kind, *viz.*, magnitudes. The distinction between these relations which are and those which are not logical relations depends simply on the abstractness and generality of their fields; classes are abstract enough to form part of the subject-matter of pure logic, magnitudes are too special to do this. But *all* relations, whether themselves logical relations or not, have logical *properties*.

And the relation $>$ has the same sort of logical properties as that of class-inclusion. Wherever the logical properties of a relation or set of relations can be clearly recognised, and seem to justify an inference, we can make the inference; and it is a matter of perfect indifference whether the relation itself be or be not a logical relation. The desire to reduce every argument to a syllogism depends on two equally baseless superstitions: (*a*) that only logical relations have logical properties, and (*b*) that no logical relation except that of class-inclusion has the logical properties needed for inference. But, granting all this, I believe that the cases where we can 'determine a conclusion from a system of' (non-logical) 'relations which, in the moment of determination, is apprehended as making it inevitable' are comparatively few and simple. Prof. Bosanquet admits and asserts that we do not, as a rule, 'read off' the connexions simply from the partial system under investigation. We have to view it in the light of our knowledge of the make-up of nature as a whole. But exactly how that knowledge arose and exactly how it operates in a given case he does not in detail tell us. To me it seems clear that it is *not* 'apprehended in the moment of determination,' but is 'borrowed' from the past researches of ourselves and our scientific ancestors; and that we do not 'read off' our results by merely gazing at it and our partial system, but reach them by definite processes of deductive reasoning, which, though not syllogistic, rest upon formal principles that can be elicited and stated.

C. D. Broad.

The Intuitive Basis of Knowledge. By N. O. Lossky. Authorised translation by Nathalie A. Duddington, M.A. Preface by Prof. G. Dawes Hicks. Macmillan. Pp. xxix, 420.

The translation of this important work of a distinguished Russian realist has been ably performed by Mrs. Duddington, and Prof. Dawes Hicks supplies an appreciative, though critical, introduction. The sole faults that can be found with the translation are in connexion with certain chemical terms. On pp. 74 and 297, where Prof. Lossky is made to speak of *chlorate*, I think it is pretty certain that *chloride* is meant. And on the latter page the expression *sulphurate of calcium* is used for what an English chemist would call *calcium sulphate*.

In the Introduction it is pointed out that, whilst we are most of us realists (at least as regards the material world) in ordinary life, philosophic study in most cases leads to something very much like subjective idealism or pure agnosticism. It is suggested that this is because philosophers, in studying knowledge, have usually taken over in an uncritical way categories like substance, cause, etc., which they daily use successfully in dealing with the material world, and have tried to force the relation between minds and their objects into these moulds. This accusation is made more detailed in the first

two chapters which deal respectively with Pre-Kantian Empiricism and Pre-Kantian Rationalism. The cognitive relation tends to be confused with the causal relation, and, again, with that of a substance to its states. The result is that all that we know is held to be the states of our own minds. External bodies and other minds are known only by precarious inferences, and Prof. Lossky has no difficulty in showing that such arguments are indefensible on purely empiricist principles even as a ground for probability.

It seems to me unfortunate that Prof. Lossky is apparently wholly unacquainted with the work that has been done in the last ten years or so in England and America. If he had been he would know that there are many writers who quite clearly recognise (*a*) that the cognitive relation is *sui generis*, and that the mere fact that so and so is an object to a mind does not imply that it is a state of that mind, in the sense in which the act of knowing it is a state, and (*b*) regard it as perfectly possible that the only causal relation between the external world and the mind in an act of knowledge is that processes in the former cause the latter to attend at a given moment to a certain part of the former. And yet many of these writers, after drawing these distinctions and recognising this possibility, still find grave difficulties in supposing that the objects of which the mind is directly aware are *in fact* physical parts of the external world or *in fact* existentially independent of the mind which is aware of them. I am not discussing whether these persons are right or wrong, but simply suggesting that, as they *do* recognise the distinctions which Prof. Lossky truly says that most empiricists overlooked, and as they are persons of fair acuteness, it is probable that difficulties about our knowledge of the external world cannot be *wholly* due to the confusions to which our author ascribes them.

The main result of the second chapter is this. Rationalists and empiricists agree in finding no difficulty about our knowledge of our own minds and their states. And the reason is that here our knowledge is supposed to be direct and immediate instead of through representative ideas. Might it not be worth while to try whether the same view would not work equally well for our knowledge of objects other than our minds and their states? This is what Prof. Lossky means by the intuitional theory, and he proceeds to give a sketch of it in the next chapter. I need scarcely tell the readers of MIND, that the general programme is not dangerously revolutionary, whatever we may think of the details. The following is, I hope, a fair sketch of the contents of cap. iii. One part of any act of knowledge is the object known; but there is always another part, and this is the act of comparing this object with and distinguishing it from some other experience. (By *experience* I suppose that *experienced object* is meant, for Prof. Lossky says: 'I contend that the experience . . . compared *is* the object apprehended,' p. 80.) Among experienced objects we must distinguish those which are mine, and those which are merely given to me. The latter include not only sensibilia, such as sounds, coloured patches,

etc., but also organic sensations (*cf.* Prof. Laird's views), and certain desires, *e.g.*, those which are treated under the head of uncontrollable impulses or fixed ideas. But in every experience, whether the object be mine or be merely given to me, there is a factor which is mine, *viz.*, the act of attending to the object given to me. In knowledge of the external world the object is transcendent, in the sense that it is not a state or part of the knowing subject, but is immanent in the sense that it (and not merely some copy, correlate, or other representative of it) is a part of the cognitive state.

As regards this doctrine there are two things to be said. First, it seems doubtful whether the relation of part and whole is a very fortunate analogy to the relation of an object known to the knowing of it. But, although the phrase is an unfortunate one, I think that Prof. Lossky's meaning is clear and sensible enough, and that he is not led astray by the irrelevant implications of his analogy. Secondly, if the doctrine is to be plausible, it will be necessary to enter into a great many subtleties and to draw a great many distinctions which Prof. Lossky does not, in this work at least, mention. It will, *e.g.*, be necessary to distinguish between knowledge of acquaintance and knowledge by description; otherwise we shall end in the morass to which this doctrine, when combined with too simple a faith in the guidance of common linguistic forms, led Meinong and his very able and courageous pupils.

Prof. Lossky holds that the standard arguments for the subjectivity of sensibilia only prove that they depend on and belong to the body, not that they are states or parts of the self. Once this is grasped it is a matter of comparative indifference to epistemology how much we ascribe to the body and how much to external objects. The general principle is that unless the necessary and sufficient conditions for apprehending a certain factor are known to lie in the body that factor must be assumed to belong to an object outside the body. Probably even sounds and colours are not purely intra-corporeal. I must confess that I do not find this theory clear or satisfactory. Prof. Lossky speaks of such objects as *sensations*, but there is no doubt that he is referring to *sensibilia*, and there is no ambiguity in his language so far. But he does speak of the 'content of the sensations' (p. 74) as being a process, and then raises the question: Where is this process going on, in my body or in external bodies? Now, I do not see that sounds and colours are processes at all, though of course the conditions of our becoming aware of them may be processes, and even the conditions of their existence may be processes. Once it is seen (*a*) that a coloured patch is not a process and (*b*) that we must distinguish the questions (i) What process conditions my awareness of this patch? and (ii) Does any process (and, if so, what) condition the existence of the patch? the elegant simplicity of Prof. Lossky's theory vanishes. *E.g.*, I am aware of a red patch and hold that I am seeing a red external object. I am right if there really is an object outside my body and if it really is red, and

it does not matter though the process that makes me aware of the patch be wholly in my own body. On the other hand, if all that is going on is a certain process in colourless atoms, I am wrong, even though this process goes on in the body to which I ascribe the red colour. The really important question about sensible qualities like green is: Is *any* physical object literally green in the sense in which all unsophisticated persons at all times, and all philosophers at most times, assert that grass is green? If external physical objects be not green in *this* sense no reference to my body will save the physical reality of greenness; for there is not the least reason to think that, though grass is not really green, my body or some part of it really is green in the sense in which I wrongly suppose grass to be so whenever I perceive grass. If these external objects such as grass be not really green, Prof. Lossky will be faced with the question: What sort of objects are green? Since he cannot answer that his own body is green, and since it is as certain that *something* is green as that we are aware of green patches, he will be forced to allow the existence of objects which are not physical and are green. (I am not for a moment asserting that in fact colours are not physically real. I think that the arguments to prove this are weak to the last degree. But I do assert that if Prof. Lossky allows *any* weight to such arguments, as he seems inclined to do, the distinction between his own and external bodies will not help him.

Finally it is pointed out that the intuitional theory must not be confined to our knowledge of particulars. We know many objects directly which we cannot know by our senses. This, we shall see later, has an important bearing on induction.

The two remaining chapters of Part I. are devoted to a criticism of Kant and his successors. They contain many excellent but no very novel observations. Kant is blamed, justly it seems to me, for overlooking the objectivity, in the sense of law-abidingness, of inner phenomena. This criticism has been excellently put in England by Mr. Balfour. Similarly he is blamed for failing to see that there is something more in externality to the self than objectivity, in the sense of obedience to law, and for failing to show in the least how our belief in any particular law is ever justified. In fact Kant took over the traditional empiricism and the traditional rationalism, and his main merit is in the highly original structure which he built on these commonplace foundations.

Part II. consists of a much more detailed exposition of the intuitional theory already sketched in Part I. Knowledge consists in comparison of one experienced object with others. (I take it that Prof. Lossky holds that being experienced is not the same as being discriminated, but is a precondition of it. This is the view that Prof. Dawes Hicks takes of his meaning, and is apparently his main point of difference from Lossky.) Judgment is thus the progressive differentiation of an originally vague subject. The

whole, which thus forms the ultimate subject of any judgment, is always before the mind just as it is in nature; the work of judgment is just the recognition of details and of their relations to each other within this whole. The S's and P's of logic are certain groups discriminated within such a whole. So long as you really confine yourself to the given whole you cannot go wrong; you cannot create anything by the act of judgment or find anything that is not there. False judgments arise through the unconscious addition of a subjective factor to the given whole. "Subjective" does not of course simply mean "non-external to the self," for we can and do make true judgments about ourselves and their states.

When thought out this theory does not seem to me to carry us very far. Lossky, *e.g.*, counts an *idée fixe* as non-subjective (p. 86). Suppose then that I erroneously believe that some one is trying to poison me, and suppose that the cause of this belief is that I have a fixed idea of persecution. I add nothing subjective, in Lossky's sense, to the whole which is the real subject of my judgment. Since then I can (*a*) judge truly when the whole content is subjective in his sense, *viz.*, in introspection, and (*b*) can judge falsely when what is added is not subjective in his sense, *viz.*, when I am deceived by a fixed idea, the important factor in false judgment must be the *addition* and not the *subjectivity*, or at best subjectivity must be involved in some sense that he has not clearly defined. Now it is a mere platitude to say that when we judge falsely we add something which is not really present in what we judge about, and it is equally platitudinous to say that this addition is in *some sense* subjective. Of course it is; all mistakes are some one's mistakes and do not belong to the objects judged about. But the really important questions are: What precisely is before our minds when we make a false judgment; how is the whole which is actually before our minds related to that to which we claim to be referring; and, if both be in some sense before our minds, how do we come to assert of one which is in fact only true of the other? I cannot see that the least light is thrown on these questions by our author.

In cap. vii. it is asserted that all true judgments are necessary. Those to which this property is usually confined are simply judgments where the necessity of P can be seen from the explicitly analysed features of S. But the necessity is really present and the same everywhere if the judgment be true. This statement seems to me to be either true but trivial, or important but highly doubtful. Take his example: This rose is withered. Since a complete analysis of the whole characterised as 'this rose' does reveal the attribute of being withered this attribute is necessarily connected with this whole in the perfectly trivial sense that any whole that did not contain the attribute of being withered could not be *this* whole, however much it otherwise resembled it. This, however, is not apparently the sense in which Lossky wishes his statement to be understood, for he goes on to say (p. 265) that 'if

we could trace the structure of all the tissues . . . and all the physical processes in them, the ground of the predicate would come into the light of knowledge'. Now, if it were really true that I could not judge that this rose is withered unless in fact a complete analysis would exhibit grounds in this sense for the predicate, the result would be most important. But I cannot see the least reason to believe it. Surely the sole and sufficient reason for saying that this rose is withered is not the grounds which we do not see but the brown colour and shrunken shape that we do see.

We are further told that in false judgments the predicate is necessitated by the subject + certain subjective conditions, but not by the subject alone. This simply makes confusion worse confounded. If S be not in fact P it is obvious that P cannot be necessitated by S whether alone or combined with subjective conditions. What is necessitated, if we accept the law of causation, is some one's belief in P. But (*a*) in the case of the true judgment it was P itself and not the belief in P which was supposed to be necessitated. And (*b*) since, even in the case of true judgments the belief in P is not the same as P itself, this belief is presumably necessitated, if at all, by conditions some of which are subjective. And I should say that in the true judgment about the rose the conditions that necessitate P (if it be necessitated at all) are not even a part of the conditions that necessitate the belief in P. The whole theory in fact seems to me to be a mass of confusion into which it is hardly worth while to penetrate further.

Judgments, we are told, if true at all, are timeless, and true for all men, even though their subject-matter be an historical event. And again some judgments are genuinely universal in the usual sense. It is the business of ontology to provide such a theory of space and time as shall allow of these facts being possible.

Cap. viii. on the Universal and the Individual seems to me to be very good and the best in the book. It is an attack on nominalism and conceptualism and a defence of realism concerning universals. The negative part is clear and conclusive, but Prof. Lossky does not stop there. He argues that, whilst it is very difficult to grasp the higher universals because they are present in nearly everything, it is equally difficult to grasp the genuinely particular. In ordinary perception what we become aware of is the universal of moderately high order. No doubt what is actually before us is a particular individual, but what we discriminate is only enough to distinguish it from its immediate surroundings and not from all other things. This seems to me to be true and important. Again he says that it is no objection to realism that universals must be in several places at once; this is simply a fact and ontology must give such an account of space as shall be compatible with it.

The ninth chapter discusses the Elementary Methods of Knowledge. Lossky recommends his theory as the only one capable of

giving a plausible account of induction. His criticism of Mill's theory of induction is excellent and conclusive, and his view that Mill's methods presuppose another form of induction is obviously sound. According to him direct induction is the immediate recognition of a connexion between universals, which is given in concrete objects of experience, and of course holds always and everywhere if it holds at all. I should very much like to believe that this is true; and I will go so far as to say that, unless something of the sort be true, induction is logically indefensible. Still there are grave difficulties and I doubt whether Lossky succeeds in meeting them. The sort of difficulty that I feel is this. There certainly are cases that fall under Lossky's scheme. Examples of two things and two things making four things gradually lead me to recognise that the universals 2, 4, and multiplication are so connected that $2 \times 2 = 4$. And this is certainly not a mere probable generalisation, but the recognition of a necessary connexion between universals. My difficulty is that with regard to any natural law we never seem to arrive at this kind of knowledge or anything like it. It is after all a kind of certainty that does not allow of degrees; one either has it altogether or not at all. If Lossky's theory of induction be true one would suppose that some natural laws at least would have acquired the kind of certainty possessed by $2 \times 2 = 4$ or by "whatever is coloured is extended". And this does not seem to be true.

Lossky admits and emphasises the difficulty of being sure that one has got hold of a law in its pure form, and expresses doubts whether even so called axioms are beyond criticism as at present stated. It remains to be seen whether such a theory of induction could be worked out in detail; it is certainly worth while to try.

Perhaps enough has now been said to show that the book is well worth reading. The critical part seems to me to be always good, the constructive part is interesting as far as it goes, but it seems to me never to go far enough and always to underrate the difficulty of the problems which it so confidently solves. The book would make an excellent text-book for students, if accompanied by lectures which went into further detail and pointed out that philosophical problems are seldom so easy to solve as the author would have us believe.

C. D. Broad.

Totem and Taboo: Resemblances between the Psychic Lives of Savages and Neurotics. By Prof. Sigmund Freud, LL.D. Authorised English translation with Introduction by A. A. Brill, Ph.B., M.D. Kegan Paul. Pp. 256. 10s. 6d. net.

Prof. Freud has turned his astonishingly fertile and ingenious mind to a new problem. Dr. Rivers has pointed out some years ago points of affinity between dreams and the myths of primitive peoples. Now Prof. Freud comes forward with a far more ambi-

tious scheme of application of his peculiar psychological principles. Briefly and baldly stated the aim of the book is to show that all totemism and taboo and, in consequence, "the beginnings of religion, ethics, society, and art meet in the Œdipus complex" (p. 260); that is to say, that all these things are rooted in the male infant's incestuous desire for his mother. This affirmation of the universality of such incestuous desire has become the foundation-stone of all Freudian psychology. Freud writes: "We have gone so far as to declare that the relation to the parents instigated by incestuous longings is the central complex of the neurosis" (p. 29); and "In every individual of the race the desire for it (*i.e.*, incestuous union with the parent of opposite sex) is unconscious, just as in the neurotic" (p. 53). This is not the place to examine this fundamental dogma. We must rather accept it for the purpose of the argument, and try to see how far its acceptance enables Freud to throw new light on the problems of totem and taboo. For if it should appear that he succeeds in this, the fact will lend support to this most disputable doctrine. The conclusions at which Freud arrives may be stated concisely and, I think, fairly, as follows. Totemism is the fundamental form of taboo from which all others are derived. The totem animal is essentially a substitute for the father. The prohibition of intercourse with all women of the totem class is an extension of the prohibition against incest with the mother and is the root of all exogamy. 'The divinity that doth hedge a king,' the taboo of kings and chiefs, is due to the king's occupying the place of the father, to his exercising paternal authority and omnipotence, and the consequent transference to him of the man's normal attitude of jealous hatred towards his father. The taboo of the dead is a further and less direct extension of the same attitude; and all other forms of taboo are extensions of this attitude towards the dead, in so far as spirits or demons analogous to the spirits of the dead are conceived by the savage as surrounding and influencing him at all times and places. Gods were developed from totem animals by a further extension of the same attitude, as the notion of spiritual powers developed. "The totem may have been the first form of the father substitute and the god a later one in which the father regained his human form" (p. 245). Thus the observance of taboo is the beginning of 'conscience,' the rites of the dead the beginning of religion, and the exogamic regulations of the totem clan are the beginning of society. Such in briefest outline are Freud's conclusions. The argument by which he seeks to establish them is twofold. The one part consists in showing the resemblances between the attitude of the savage to his totem and other taboo objects and that of the neurotic, and in a less degree of the normal man, towards his father. The other part consists in showing how, these attitudes being postulated, savage societies may be supposed to have developed their particular forms of taboo and ritual. Let us consider first the former part. The attitude of every man towards his

father is 'ambivalent'. He hates him and desires to murder him, because his father enjoys sexual intercourse with his mother, on whom his own sexual libido is fixed. All this sexual jealousy is normally driven into 'the unconscious' by the social prohibitions and the tenderness for the fatherly protector which naturally arises in response to the father's loving care. In the normal civilised man this repression is successful and continued; but in the neurotic and the savage (for all savages are more or less neurotic or at least in a condition very similar in many respects to neurosis) this repression is less complete, and the incompletely repressed hatred of the father works powerfully within him, alongside his desire for incest with his mother, determining much of his emotional attitudes and actions. This 'ambivalence' of the emotional attitude towards the father is the key which Freud uses to unlock all doors in this obscure region. It is on showing a similar 'ambivalence' of attitude towards the totem, towards kings, towards the dead, and towards taboo objects in general that he chiefly relies for the justification of his scheme. The second part of the argument consists in adopting Robertson Smith's view of the totem feast and the attractive hypothesis of the nature of primeval society which Atkinson and Andrew Lang erected on the basis of a suggestion of Charles Darwin. The combination of these two hypotheses with the principle of the great strength in savages of the 'ambivalent' attitude to the father, based on the incestuous desire of the mother, yields the following sketch of primitive society. The father or patriarch expels from the family circle his adolescent sons, in order that they may not share his rights over the females of the group. When the band of exiled brothers feels itself strong enough, they return, kill the father and eat him; then, being filled with remorse for the treatment of their tenderly loved (consciously) father to which they have been impelled by their unconscious jealousy of him, instead of satisfying their incestuous desires, they set up a strong barrier against any such indulgence, in the form of the exogamic law or taboo against intercourse with the mother; and, since the father was a polygamist, or rather indulged himself indiscriminately with all the females of the group, this taboo against incest affects all the women of the group. The father whom they have slain and eaten then becomes the totem, and the women of his group belong to his totem; and the horror of incest with them remains strong, just because the desire for the mother extends itself to all these wives of the father, for they are collectively the mothers of the revolting brothers, and a mother is by definition a woman with whom they unconsciously desire sexual intercourse. In the totem feast the brothers, *i.e.*, the men of the totem clan, repeat ceremonially the slaying and devouring of the beloved father, thus giving vent once more to their unconscious hatred and, at the same time, renewing their sense of remorse and guilt, which is the foundation of all religion. The taboo of kings and gods at a later stage of social evolution is a natural extension to these wielders of paternal

authority of the ambivalent attitude of tender affection and of guilty remorse. And to the dead in general the same attitude extends, because all death is regarded by savages as due to murder and the sense of guilt of the patricides is so strong and the ambivalence of their emotional life is so habitual, that they feel themselves to be the murderers of all of their relatives who die; and the more they love them the more strongly do they unconsciously hate them, and therefore the more distinctly do they feel the sense of guilt and the fear of their shades. It is advisable to substantiate this condensed account by citing a few of the most relevant passages. "Psychoanalysis has revealed to us that the totem animal is really a substitute for the father, and this really explains the contradiction that it is usually forbidden to kill the totem animal, that the killing of it results in a holiday and that the animal is killed and yet mourned" (p. 234): "the expelled brothers joined forces, slew and ate the father, and thus put an end to the father horde. . . . Of course these cannibalistic savages ate their victim. This violent primal father had surely been the envied and feared model for each of the brothers. Now they accomplished their identification with him by devouring him and each acquired a part of his strength. The totem feast, which is perhaps mankind's first celebration, would be the repetition and commemoration of this memorable, criminal act with which so many things began, social organisation, moral restrictions and religion" (p. 236). "They hated the father who stood so powerfully in the way of their sexual demands and their desire for power, but they also loved and admired him. After they had satisfied their hate by his removal and had carried out their wish for identification with him, the suppressed tender impulses had to assert themselves. This took place in the form of remorse" (p. 237). This remorse forbade the killing of the totem, except ceremonially. "They undid their deed by declaring that the killing of the father substitute, the totem, was not allowed, and renounced the fruits of their deed by denying themselves the liberated women. Thus they created the two fundamental taboos of totemism out of the sense of guilt of the son, and for this very reason these had to correspond with the two repressed wishes of the Œdipus complex" (p. 238). "At first the brother clan has taken the place of the father horde and was guaranteed by the blood bond. Society is now based on complicity in the common crime, religion on the sense of guilt and the consequent remorse, while morality is based partly on the necessities of society and partly on the expiation which this sense of guilt demands."

This comprehensive scheme of explanation of all things in terms of 'the Œdipus Complex' might be criticised by questioning the truth of its three basal hypotheses, namely, the universality of the Œdipus complex, Robertson Smith's view of the totem feast, and the Lang-Atkinson view of the nature of the primitive human group and the 'primal law'. It might also be criticised by pointing to

things that it does not explain, such as totems which are not animals, but such things as the sun, stars, rain, wind, and taboos such as those connected with agricultural operations or whatever other things and actions are of great importance to the savage. But Prof. Freud's ingenuity would no doubt be equal to the task of extending his system of explanation to such things, also, to tracing all of them back to the Œdipus complex. It is more profitable therefore to waive such objections, to grant to Freud his three basal hypothesis, and to inquire whether, these being given, the scheme as applied entails any insuperable difficulties. One serious difficulty is lightly touched on by Freud himself. "We know nothing about the origin of this ambivalence (the coincidence of love and hate towards the same object). It may be assumed to be a fundamental phenomenon of our emotional life. But the other possibility seems to me also worthy of consideration: that ambivalence, originally foreign to our emotional life, was acquired by mankind from the father complex, where psychoanalytic investigation of the individual to-day still reveals the strongest expression of it" (p. 261). "It can hardly have escaped any one that we base everything upon the assumption of a psyche of the mass in which psychic processes occur as in the psychic life of the individual. Moreover, we let the sense of guilt for a deed survive for thousands of years, remaining effective in generations which could not have known anything of this deed. We allow an emotional process such as might have arisen among generations of sons that had been ill-treated by their fathers, to continue to new generations which had escaped such treatment by the very removal of the father." That is to say Freud here raises the question which is raised also in an acute form, but not, so far as I know, previously mentioned by him, by his doctrine of fixed universal symbols; the question namely of the validity of postulating well formed racial innate ideas and racial sentiments or complexes. Jung has boldly recognised this problem and accepted such innate ideas, in his doctrine of universal 'archetypes' of thought; and it is interesting to see that Freud is becoming alive to the same implication of his doctrines. In the present state of biological opinion the necessity of assuming such innate factors of the mind is an objection to the whole Freudian system; but not a fatal one, for the possibility of the transmission of acquisitions by use-inheritance cannot be absolutely ruled out. But, if we grant such implanting in the racial mind of such ideas and tendencies by use-inheritance, we cannot allow Freud to play fast and loose with the principle, as he inclines to do. For he tells us that Westermarck is wrong in supposing the horror of incest to be innate—"the experiences of psychoanalysis make the assumption of such an innate aversion to incestuous relations altogether impossible. They have taught, on the contrary, that the first sexual impulses of the young are regularly of an incestuous nature" (p. 206). It would indeed be difficult to admit that each of us inherits both a tendency to

incestuous love and a horror of it; and to admit this would be gravely disturbing to the whole Freudian system. We have then this curious situation. Freud asks us to admit that the remorse and sense of guilt experienced by the rebel sons of the primeval horde who slew and ate their father became innate in all their descendants and has been the basis of all subsequent religion; while the horror of incest, which is assumed to have been evoked in each generation during and since those remote ages, has not become in any degree innate. Another serious difficulty arises in connexion with those forms of taboo known as 'avoidance customs,' avoidance of females of the same totem, the mother-in-law, and so on. Freud assumes that the avoidance custom is evidence of unconscious incestuous desire, for only if the desire and also horror of it as incestuous be present will the avoidance taboo be maintained. "If taboo expresses itself in prohibition it may well be considered self-evident . . . that it is based on a positive desireful impulse. For what nobody desires to do does not have to be forbidden" (p. 117). We have then to suppose that the incestuous desire for the mother is extended to all women who are the objects of 'avoidance'. It would seem that this incestuous desire in a so highly inflammable passion that the mere acquisition by any woman of a position in any way resembling that of the mother, *e.g.*, that of mother-in-law, or that of membership in the mother's totem group, suffices to direct it upon such a woman and thereby to necessitate the imposition of the taboo. In these few critical remarks I have been willing to give Freud all the rope he asks for, and even more; but there are limits to our credulity beyond which even the glamour and prestige of the Freudian psychology cannot and should not carry us; and in this matter, I think, those limits have been passed. I cannot conclude without citing one delicious example of the working of the Freudian imagination. "With the introduction of agriculture the importance of the son in the patriarchal family increased. He was emboldened to give new expression to his incestuous libido which found symbolic satisfaction in labouring over mother earth" (p. 253). So that agriculture also can be traced back to the Œdipus complex. It is true that many anthropologists have shown reason to think that women were the first cultivators of the soil. But no doubt they were accustomed to speak of 'father earth,' and by so doing were enabled to secure the much-needed symbolic satisfaction of their incestuous libido. Is it possible that when men speak of mother earth, they are really disguising the fact that unconsciously they regard the earth as their father and that, when they thrust their implements into it, they are repeating the primordial tragedy of the slaying of the much loved and hated father? This suggestion may be recommended by the fact that its acceptance would at once explain the practice of earth-eating or geophagy which at one time may have been universal. It would also explain the universal tendency of boys to cover themselves with mud; for if the earth is the father, it is obvious that mud is the blood of the father, and by

thus imbruing their hands with the blood of the father they would find satisfaction for their unconscious hatred of him.

In short, is it not obvious that if we allowed ourselves the laxity of reasoning which is habitual to Freud and many of his disciples, and if we possessed his fertile ingenuity, there would be literally no limits to the possibilities of application of his principles, and that every detail of the conduct of men in all the seven ages might be traced back to the same foul root, 'the Œdipus Complex'?

W. McDougall.

L'Energie Spirituelle, Essais et Conferences. By Henri Bergson. 2nd edition. Paris: Felix Alcan, 1919. Pp. 227.

It was assuredly a felicitous idea of Prof. Bergson to republish these essays: for not only do they gain by being brought together, but they serve to illuminate and test the philosophy which inspires them, and help to impress upon the world the important novelties it contains. In philosophy new ideas are of such rare occurrence and the mass of philosophers are so content to ruminate (in inferior form) the traditional dogmas they have derived from Parmenides and Plato, that when anything really new is said, it has to be repeated again and again until it begins to sound familiar to minds that would otherwise be incapable of assimilating it. In this case it is fortunate, both for the author and the reader, that Prof. Bergson commands such singular felicity of style and fertility of illustration that his points always seem new even where he is really enforcing his old ones.

The present volume, he says in the preface, contains papers dealing with definite problems of psychology and philosophy which all centre round that of spiritual energy, and is named accordingly; he promises a second volume to include papers dealing with the method of his philosophy, its origin and mode of application. This second volume will be no less welcome than the first and will doubtless go far towards setting at rest the difficulties which have been raised about the meaning of 'intuition'. Meanwhile the book is actually composed of (1) the Huxley Lecture on *Consciousness and Life* given at Birmingham in 1911; (2) an essay on *Soul and Body* republished from *Le Matérialisme actuel* (edited by Dr. Gustave Le Bon); (3) the brilliant Presidential Address delivered to the Society for Psychical Research in 1913; (4) a lecture on *Dreaming* delivered at the Institut Général Psychologique in 1901; (5) an article on Paramnesia from the *Revue Philosophique* of December, 1908; (6) another, on *Intellectual Effort*, which appeared there in January, 1902; and (7) a paper submitted to the Geneva Congress of Philosophy in 1904, of which the title has been changed (to advantage) from *Le Paralogisme psycho-physiologique* to *Le Cerveau et la Pensée, une illusion philo-*

sophique. I shall endeavour in each case to note the most significant points of the argument.

The Huxley Lecture enforces with great wealth of illustration the conception that the mind is essentially "a bridge thrown from the past to the future," and its 'memory' accumulates the past in the present. The brain functions as an instrument of *choice*, which determines what motor reaction is to be the suitable response to a sense-impression. To do this it has to 'remember,' *i.e.*, to utilise the past so as to forecast the future. But there is no need of consciousness where automatic routine responses suffice. Hence plants, having become 'earth-parasites,' have renounced their right to motion and consciousness. Nevertheless nothing that lives is wholly devoid of these, and with them of the power to act and to create the new, by 'inserting' itself into brute matter and 'detonating' its stored-up energies. Thus life is essentially 'freedom,' and it is difficult to view its evolution without feeling that it is animated by a *poussée* which for ever urges it, unpredictably, to new creations (p. 20). This *élan vital* is only a hypothesis, a mere possibility as yet—but we may come to understand it presently.

The second essay emphasises again that the function of consciousness is to import novelty into the world (p. 33). M. Bergson points out that metaphysical philosophy has been unwilling or unable to devise a theory of the relations of mind and body (p. 40). Consequently the scientist was entitled to assume a complete correspondence between the psychical and the physical and to proceed as if thought were only a function of the brain. Indeed Cartesianism, conceived as it was as an encouragement to the science of mechanics, could mean nothing else in its scientific application: still materialism is not science, but sheer metaphysics. Actually the brain is an instrument for effecting choices, not the choice itself; thought therefore is largely independent of the brain (pp. 46-47). Psychology scarcely studies real living thought; what is called thought is only an artificial imitation formed by compounding images and ideas (p. 47). But ideas arise only when thought is arrested by some obstacle; and the real thought is an individual movement, the *sense*, which passes through the words it uses. The brain, being material, serves to adapt thought to the material world, and may be called *the organ of attention to life* (p. 51). This is why quite a slight injury to it can upset the mind's functioning. To compare his theory with materialism, Prof. Bergson takes the test case most favourable to the latter, that of memory; he shows that even here retention cannot be mechanical, and that even aphasias are failures of adjustment to the situation. The use of verbs is the last to be lost, because they are the words for actions. Every word in a phrase carries in its context the whole past of whoever pronounces it. The whole past therefore is subconsciously there; only it is screened off by the bodily mechanism. Thanks to that we can attend to the

future; it does not preserve, but conceals, the past, allowing only so much of it to come through as is practically usable. Whence it follows that the soul extends beyond the body and its survival becomes conceivable.

With this corollary to his psycho-physical theory Prof. Bergson definitely ranges himself among the advocates of what James has called the 'transmission' theory of the relation of body and soul, and appreciably enhances the probability that psychologists and philosophers will presently have to take it seriously into account. As one of the first to have perceived its logical merits, I can only welcome M. Bergson's support. The conclusion of this essay also explains how in the next we find him delivering a Presidential Address to the Society for Psychical Research. Here we find once more the idea of a body which serves to concentrate a vaster spiritual life upon immediate practical needs, with the corollary that the soul may well survive the body. The address concludes with a highly suggestive speculation as to what would have happened if our science, instead of developing out of the problems of physics and solving them by dint of mechanics, had started from those of psychology and had evolved a vitalistic biology and psycho-therapeutic medicine, but had failed in applying these notions to physics; no doubt the triumphs of mechanistic science would then have appeared miraculous.

In the fourth essay M. Bergson endeavours to be more 'orthodox'. Up to a point his account of dreams spares scientific susceptibilities. Dreams are not fabricated out of nothing, but out of sensory stimulations which the sleeping organism continues to receive; they yield no new experience and are not truly creative. Dreams of flying and of problem-solving are explained away. Theoretically a dream is a fusion between a memory and sensation (p. 103), and its mechanism does not differ in principle from that of perception (p. 106). It differs only in that it represents the total mentality *minus* the special effort which narrows it down to the real world, and so fails to render its memories relevant and to fit them on the sensory stimuli correctly. The apparent rapidity of dreams is explained similarly; memories can 'race' when the real no longer acts as a fly-wheel to regulate their pace. But finally there comes a reference to psychical research and a hint that after all there may be something more in dreams: those discussed were the shallow dreams of light sleep, but those of deep sleep, could we study them, might reveal supernormal powers and a completer memory of our past. I should cordially agree, but contend that ordinary dreaming really implies as much. For surely flying in dreams, until aviation was invented and for those who have not practised it, *was* a novelty that had no parallel in experience. Moreover, creative thought in dreams is by no means as rare as Prof. Bergson supposes: in addition to R. L. Stevenson's case which he mentions, Coleridge's *Kubla Khan*, the discovery of 'Verner's Law,' and Jastrow's Babylonian cylinder are well

authenticated. But what is most surprising in Bergson is that he of all people should have passed over the problem of *selection* in dreams. For dreams are quite as clearly selective as waking perception and the association of memories with sensory images is as little mechanical as in waking life. Many dreams (possibly all, if we allow for the fragmentariness of our memories) *have a plot*, the point of which is usually directed against the dreamer. He at any rate neither foresees it nor constructs it. Now this implies 'dissociation,' not merely between the dreamer and the waking self (as is attested by the amount of amnesia for dreams), but also between the dreamer and the 'maker of dreams'. M. Bergson seems to catch a glimpse of this when he remarks (p. 100) that in problem-solving "the part of the mind which works is not the same as that which is dreaming": the latter is always passive and usually the victim of the plotter of the dream. Hence dreams are even better evidence than M. Bergson claims for a mind that extends beyond the exigencies of practical life.

The fifth essay is a masterly and fully-documented study of 'false recollection' or paramnesia, which turns out to be 'memory of the present'. When, owing to some diminution of the mind's normal tension, there is a slight momentary lapse in the attention to life, the memory, which should be formed simultaneously with the perception, fails to coalesce with the image; so it appears by its side with its inherent pastness; the present perception thereupon appears to be 'remembered' and the real seems dream-like.

The sixth essay, perhaps the most difficult in the book, may be said to be concerned with the problem of the purposive direction of a train of thought and the utilisation of the mental images which occur in it. Prof. Bergson sees what most psychologists have failed to grasp, that their *relevance* has to be accounted for, that there is a plan of action involved, and that *the meaning* of the images somehow determines their occurrence. Mental effort is felt when the '*schéma*' or plan has difficulty in selecting suitable 'images'. To clear the matter up completely it would probably be necessary to make a further study of the notions of 'relevance' and 'meaning'; but Prof. Bergson is clear that the reduction of the mind's contents to images is a hypothesis and an attempt to treat them on the model of external objects (p. 200).

The last essay is a very closely reasoned criticism of psychophysical parallelism, when conceived, not as a methodological principle, but as a piece of dogmatic metaphysics. As such it passes, surreptitiously and fallaciously, from one system of notation to another. Philosophy has the power to treat everything either (realistically) as a *thing*, or (idealistically) as a *representation* (idea). If either notation is used consistently, the parallelistic equation of psychic state with cerebral ends in a contradiction. To maintain it *both* must be used, and the contradiction evaded by an oscillation between them. Thus with the idealist notation parallelism must mean that the perceived objects are superfluous.

For the cerebral state is enough to cause perceptions. Yet as for idealism external objects and the brain are both 'ideas,' this means that the brain-idea can represent the external-world-idea. But as the brain is a part of the external world, parallelism implies that the part is the whole. The contradiction escapes notice because there is an unconscious transition to realism: the brain and its movements are unconsciously turned into real things.

Realism postulates (1) external objects which modify (2) a brain, so as to excite (3) ideas in it. Consequently the brain alone cannot create the ideas of objects. Here again parallelism credits an artificially selected part of the real with the performance of the whole. Practically there is continual oscillation between the idealistic and the realistic conception of ideas. They are first treated as *things* and as capable of containing what they do not actually exhibit. But this is to identify the brain as it appears to us with the underlying reality, and this is idealism. Yet to affirm an underlying reality is realism once more, while to apply to the real the laws of ideas is a reversion to idealism. There is thus continual equivocation between the brain as an idea and as the underlying reality, and whichever way it is taken it cannot be equated with all that is.

This argument is so subtle that it would gain by expansion and illustration from the actual oscillations of parallelists. But it is well worth pondering, as indeed is the whole book, of which, one is gratified to learn, a translation, by so competent a hand as Prof. Wildon Carr's, is shortly to appear.

F. C. S. Schiller.

VI.—NEW BOOKS.

The Idea of Immortality, its Development and Value. By GEORGE GALLOWAY, D.Phil., D.D., Principal and Primarius Professor of Divinity, St. Mary's College, University of St. Andrews. The Baird Lectures, 1917. Edinburgh: T. & T. Clark, 38 George Street, 1919.

THIS is an altogether admirable course of Lectures. It is essentially moderate and reasonable in tone. Perfectly clear and definite in his own conviction both as to the truth and as to the importance of the belief in personal Immortality, the author certainly cannot be accused of exaggerating either the essentiality of the belief or the strength of the argument for it.

The first chapter contains a very moderate estimate of the importance of the question. The second chapter gives an interesting account of early beliefs on the subject. The third deals with "Science and the Problem of Immortality". Principal Galloway aims at rebutting materialistic and other arguments against the possibility of Immortality, and arrives at the conclusion that nothing that is known as the nature of the soul and its relation to the body is inconsistent with the belief in its survival after death. The results of psychcial research are briefly dealt with; the writer holds that survival has not been proved. He seems disposed to accept the view that "ostensible cases of telepathy from the dead can generally be explained by telepathy from the living" (p. 94). Then there is a chapter on "Philosophy and the Problem". It contains an admirable survey of the development of philosophical opinion on the subject. While Dr. Galloway holds that no purely metaphysical or psychological argument can by itself prove, or even establish the probability of, the belief, he shows how profoundly the attitude of the philosopher towards it is affected by his general theory of the Universe, especially his view as to the relation between God or the Absolute and the individual mind. Much good criticism upon the systems which do not favour the belief, and on some of those which do so, is condensed into a very short space. The writer insists that "a monistic idealism in which God, or the concrete universal who unifies all differentiations, is an all-inclusive unity, has hardly room for the persistence of the personal spirit after death. For it gives no adequate recognition to human personality at the outset" (p. 119). He has some good reflexions on the various attempts to show that values are conserved in a Universe in which all souls are extinguished at death. "In what way," he asks, "can value be conserved if the personal lives which make value real are not conserved? Surely it is an 'inconceivable abstraction' to speak of impersonal values! Eliminate the personal reference, and values must cease" (p. 124). On the other hand, a Philosophy which recognises the reality and importance of the individual makes personal survival a perfectly admissible hypothesis. Principal Galloway's own particular way of giving the individual soul its due importance and place in the Universe, and of explaining its relation to the individual body, is by a kind of Monadology—based on Leibnitz and Lotze but not identical with either system—which, to me

personally, does not seem very convincing. His views on this matter have been more fully developed in his other works, and it would be out of place to explain or criticise them here. There is a rather difficult speculation as to a possible pre-existence of "the essential self" (*i.e.*, the dominant monad) without a pre-existence of the "concrete human personality which is a centre of specific relations and memories". This view no doubt appears to concede to the soul a certain independence of the bodily organism which might be held to favour the idea of its survival after death. And yet Dr. Galloway is so much impressed with the difficulty of supposing that "the organism and the environment, closely linked together as they are, could pass utterly away, and the personality which had developed in them and through them remain in the fullest sense one personality" (p. 139), that he feels driven to "the idea of a developed self, no longer thwarted and impeded by a body, but fashioning for itself an organism [a new organism] to be the more perfect instrument of the spirit" (p. 140). The pages in which this view is developed form the most original part of the book; but it is not necessary to accept the views here propounded to agree with the general conclusion that a Metaphysic which duly recognises the importance of the individual spirit and its relative independence in relation both to matter and to the Universal Mind leaves the hypothesis of personal Immortality a quite possible, if a difficult conception, while it is only when we take into consideration the deliverances of the moral consciousness that we can reach any positive argument in its favour.

In chapter v., Dr. Galloway develops "the ethical argument for Immortality". The belief in Immortality is "a postulate put forward to harmonise the facts of experience, and to make them consistent with the demands of the moral consciousness" (p. 157), which are of course themselves facts of experience. This is not "an argument from human wishes and desires": it is based "on the demand of the practical reason for coherence and harmony in a moral universe". Dr. Galloway goes on to argue that it is demanded also by "the principle of immanent justice". In view of Prof. Laird's recent attempt to show that the moral argument for Immortality disappears when the retributive theory of punishment is abandoned, it may be well to add that Dr. Galloway definitely disclaims this view. But, he contends, "any complete view of human good implies a union of virtue and happiness" (p. 159). And such a union could never be adequately realised in such a world as ours without personal immortality. Dr. Galloway then goes on to show that the argument for the necessity of Immortality to rationalise the Universe is practically the same as that other form of the ethical argument which "takes its departure from the acknowledged incompleteness of man's moral life". If man "is condemned to pursue ideals which the scope of his earthly life precludes him from attaining, it is only reasonable to expect that room will somehow be given for their attainment" (p. 167). "The notions of justice and completeness come together in the conception of a teleological development of the personal life to its consummation in the transcendent world" (p. 169).

The concluding chapter deals with "Immortality and the religious view of the world". Prof. Pringle-Pattison has recently complained of the exaggerated expressions of certain writers of the last century (*e.g.*, Tennyson) as to the worthlessness of life without the hope of Immortality. He could hardly make the same complaint of Dr. Galloway's plea for the essentiality of this belief to the religious view of the world. It would be impossible to desire a more temperate and balanced statement than is contained in this chapter. After showing the unsatisfactoriness of mystical and pantheistic conceptions of Eschatology and tracing the

gradual evolution of the idea of personal Immortality in late Judaism and Christianity, he concludes that "there cannot be an abiding dualism in the heart of things: the end of development cannot be a Kingdom of darkness which remains to the last in eternal contrast and antagonism to the Kingdom of light. For if spiritual development ended in such a contradiction, it would seem that it closed in failure and defeat. The inevitable conclusion would be that the Divine plan had been frustrated, and the Divine purpose had failed to reach its complete fulfilment" (p. 225).

I am disqualified from much criticism of Dr. Galloway's book by my complete agreement with its general line of thought. Within the limits prescribed by the size of the book and the attempt to deal with the subject by itself and apart from a general system of Metaphysic, one could hardly desire a better, clearer, or soberer statement of the case. Perhaps, personally, I might have liked now and then a little harder hitting both in the defensive and the offensive parts of the argument: but many will probably find Dr. Galloway's extremely moderate and judicial handling of the subject more convincing than a more impassioned argument. Though very intelligible and untechnical, and not intended exclusively for professed students of philosophy, the argument is conducted on a high philosophical level: there is no rhetoric, no appeal to mere sentiment, and no evasion of difficulties.

H. RASHDALL.

A Fragment on the Human Mind. By JOHN THEODORE MERZ. London: Blackwood & Sons, 1919. Pp. xiv, 309.

These pages will have a great interest for all lovers of careful thinking as a postscript to Dr. Merz's great work on the *History of European Thought*. As we are told in the *Preface*, they are to be taken as a corrective to the impression, which the last two volumes of that monumental study has produced in many quarters, that Dr. Merz is too much in sympathy with German idealism and a-priorism to do full justice to the "plain historical method" so characteristic of British philosophy. Certainly the balance is very generously redressed in the present *Fragment*; the only question it suggests is whether, in the generosity of his heart, Dr. Merz has not allowed the pendulum to swing rather too far. What he undertakes to do, to put it briefly, is to accept the results of Hume's negative criticism completely, and then to show how by substituting the "presentation-continuum" of Dr. Ward for Hume's scheme of a sequence of "ideas" which are all "individual" existences, and putting ourselves at the point of view of a genetic psychology, we can build up on a basis of Humian phenomenalism a constructive idealism which might perhaps be described as Hegelianism interpreted by the aid of Lotze. I own to a certain obstinate doubt whether the thing can be done at all. I have, in fact, two great difficulties in accepting the first principles of Dr. Merz's construction. I am not satisfied that the whole procedure is not an attempt to make a genetic psychology do the work of a critical theory of knowledge, and does not thus involve the confusion of an inquiry into facts with an examination of values. I think I detect evidence of this confusion of two different questions in what appears to be the thorough-going identification of the standpoint of genetic psychology as such with the *vue d'ensemble* or "synoptic view" of problems to which the *History of European Thought* itself is so notable a contribution. The *vue d'ensemble* of course requires that psychological analysis shall be integrated with genetic psychology, but surely it requires a great deal more as well. And again in reading Dr. Merz I am haunted by the suspicion that he

never fairly succeeds in expelling from his construction the subjectivism he has introduced out of Hume into its foundations. He seems to me,—perhaps, in spite of repeated reading, I have not quite caught his meaning,—to concede to Hume the fundamental false thesis from which Hume's scepticism springs. I mean that he starts with a "presentation-continuum," or to use the metaphor he prefers, a "firmament of thought," which is taken to consist simply of psychical states. "Ideas" are treated, exactly as Hume treated them, as so many events; it is forgotten that they have from the first a cognitive value as revealing objects. When one begins with this assumption, I do not see that the correction of psychological atomism by the concept of a "firmament of thought" really mends matters much, so far as one's philosophy goes, though it may be an improvement in one's psychology. One may succeed, no doubt, in showing how interconnexion is established between different regions in the "firmament," how some complexes come to symbolise them, and may arrive thus at a great deal of sound historical knowledge about the way in which the organisation of thought develops. But,—how does this thought ever become that something more than thought which we assume it to be when we call it *knowledge?* If the crude beginnings themselves are not from the first knowledge, how is knowledge made out of "mental processes" as they get increasing systematic structure? There is the problem to be solved by a writer who sets himself to get philosophy out of a positivistic psychology, and I do not feel that Dr. Merz really solves it, nor indeed that he is fully alive to its inherent desperateness. I honestly think that in his generous desire to show how cordially he appreciates the performance of Hume, he conceals from himself the impossibility of the task he has set himself. The point is, of course, that Hume begins by excluding the cognitive value of the "impression" from his purview. The "impression" is treated simply as an "event," as something that happens; it is forgotten that it is also something which has a meaning. If you begin by thus eliminating the aspect of value from the "impression," I do not see how any amount of psychological subtlety is to correct this initial error. You will at best build up a genetic theory of the processes by which the "stream of thought" takes shape. By introducing the presentation-continuum you may make this theory something much richer than anything Hume could construct on the lines of a crude Associationism, but the "stream of thought" or "firmament of thought" still remains only a stream or firmament of *thought*, a very elaborate and interesting complex, but a complex of mere "occurrences". *Knowledge*, if it is to be found in the result of your construction, must have been there all along from the very first. This is, of course, the real and unanswerable point for which T. H. Green is contending against the "naturalists," and the soundness of the contention is in no way affected by the objections which may be taken to Green's own attempt to replace the naturalist misconceptions by a curious amalgam of the *Critique of Pure Reason* with an Averroist Aristotelianism. Or, to put my point in another way, when Dr. Merz corrects Hume in the light of Ward, I am not sure whether he is quite clear on the all-important point that the continuum which figures in Dr. Ward's psychology as the "presentation continuum" is all along a presented *object*, not an occurrence. That it is spoken of in language which might be taken to refer to a mere occurrence, as a continuum of presentations rather than a continuously present object, is, I take it, a mere consequence of the fact that Dr. Ward's immediate concern in his account of it is with psychology and not with philosophy. I venture to think that Dr. Merz's *Fragment* would have gained in value if he had not allowed himself to treat Hume quite so much as the logically necessary final outcome of the line of thought initiated by Locke. It is, after all,

only one side of Locke which is worked out in Hume. If we keep it in mind that Locke's real object was critical philosophy, not psychology, and observe how prominent the question of the value of our cognitive processes as knowledge is made throughout the *Essay*, we may feel a great deal of doubt about the legitimacy of Hume's claim to be regarded as the *philosophical* heir of his great precursor. I think that the popular version of the history of British philosophical thought distorts the real connexions both in supposing Berkely to be much more concerned with Locke than he really is, and in exaggerating the influence of Berkeley on Hume.

I have devoted this notice to indicating the reasons why it seems to me that Dr. Merz has set himself an insoluble problem. It need hardly be said that any sketch of the growth of a mind coming from Dr. Merz is bound to present many striking and happy reflexions, and will be read with profit and pleasure by all who know the value of his great work on European Thought. I should like in particular to call attention to the admirable reflexions about religion and the claims of the Christian religion in particular with which the *Fragment* concludes. Dr. Merz is abundantly qualified, if any man could be, to speak as "one having authority" about the bearings of philosophy on religious belief, and it is most instructive to see how completely free he shows himself of the tendency, so often ludicrously illustrated by the behaviour of men without a tithe of his vast knowledge, to attempt to prescribe this or that restriction to living faith in the name of "philosophy".

A. E. TAYLOR.

Pleasure-Unpleasure: an Experimental Investigation of the Feeling-elements. By A. WOHLGEMUTH. British Journal of Psychology Monograph Supplements, no. 6. Pp. 252.

This work is a detailed account of an experimental investigation of Feeling by the 'method of impression,' with complete introspective protocols and full analysis of these protocols. The experimental notes and records are prefaced by a short introductory discussion, devoted in the main to questions of terminology and classification, and succeeded by an equally concise statement, in a series of propositions, of the conclusions which the author draws from his experimental results The whole represents one of the most valuable contributions to the psychology of Feeling that can up to the present be placed to the credit of the psychological laboratory. Not many years ago Titchener was deploring the unsatisfactory state of the psychology of Feeling, and in particular the lack of definite experimental evidence on some disputed points. It almost seems as if Dr. Wohlgemuth had been stimulated by Titchener's complaints to undertake the present investigation, so aptly does it fit in with the general tenor of Titchener's remarks.

It cannot be expected that in a subject like the psychology of Feeling the results of a single investigation will still all controversy. Indeed we doubt whether, on any one of the main questions at issue between the leading controversialists, Dr. Wohlgemuth's results will be accepted as final and conclusive. All the same it is much to have brought the questions to a clear experimental issue, and to have placed on record definite experimental evidence for or against views, which had previously little substantial basis beyond theory and general impressions.

A survey of the work suggests two main criticisms, the first as to the scope of the enquiry as it apparently presents itself to Dr. Wohlgemuth, the second as to the range of problems actually studied, as it appears to

the interested onlooker. Dr. Wohlgemuth, rather dogmatically perhaps, assumes that his investigation is concerned with the *affective elements*. He does not like that term and would prefer to speak of 'Pleasure-Unpleasure'. We may let it go at that, though without agreeing. The 'Pleasure-Unpleasure' he has in view, and the 'Pleasure-Unpleasure' the investigation is calculated to emphasise, is that involved in the sense-feelings. The other forms of 'Pleasure-Unpleasure' that make their appearance in the course of the investigation are by-products. Now it is assuming a good deal to assume that the affective elements—the term cannot be avoided—are truly and adequately represented in the 'pleasure-unpleasure' of the sense-feelings. It is not clear that the 'satisfyingness' or the reverse of a course of action is not equally elementary. With respect to the range of problems studied, we cannot altogether resist the feeling that more has been attempted than was quite desirable in the interests of the adequacy and validity of the results. A general survey of the whole field is characteristic of preliminary work in the experimental study of a complex congeries of problems. That is followed by detailed and systematic work on individual problems, applying every possible method of control, and using every possible precaution. The question may be raised whether the experimental psychology of Feeling has or has not arrived at the second stage. A preliminary general survey, in any ordinary sense, of the whole experimental field Dr. Wohlgemuth's investigation is certainly not, but we must confess to a faint suspicion that had he concentrated his attention on a single problem, or a few problems, availing himself perhaps of the 'method of expression' as a control, he would have provided us with results more calculated to inspire confidence and retain permanent validity.

The most interesting conclusions at which Dr. Wohlgemuth arrives are:—

1. That "there are only two qualities of feeling-elements".
2. That "two or more feeling-elements"—like or unlike—"may co-exist in consciousness".
3. That "feeling-elements can often be localised".
4. That "there is nothing on the affective side of consciousness to correspond with the memory image on the cognitive side".
5. That "if a feeling-element is attended to as belonging to a cognitive context . . . it is intensified and becomes clearer".
6. That "the feeling-element of any state of expectancy appears to depend upon the feeling-element of the expected experience".

Without having before us the experimental evidence upon which these conclusions are founded it is futile, not to say unfair, to attempt any criticism of them here, but they at least serve to illustrate the extent to which Dr. Wohlgemuth's results cut across current controversies in the field of affective experience, and to prove the very great psychological importance of his work. When all is said and done, that the work is of the greatest interest and significance must remain our final verdict.

JAMES DREVER.

General Psychology. By WALTER S. HUNTER. Chicago: University of Chicago Press. Pp. xiii + 351.

This work is intended as a textbook for an introductory course in psychology. The author—Prof. Hunter, University of Kansas—has followed the method and order of treatment, which he has found most successful in his own teaching of the subject. The result is a book presenting several novel and interesting features. Probably every teacher

of psychology has experienced the difficulty of orienting himself to the beginner's point of view without sacrificing the scientific and logical presentation of the subject more than is absolutely necessary. To some extent perhaps this difficulty is felt with all sciences, but it is felt more especially with psychology on account of the fact that some of the most abstruse and intricate problems of the science must be encountered by the student at the very start. Hence a new method of attack, whether it ultimately commends itself to his judgment or not, will always have considerable interest for the teacher of psychology.

Prof. Hunter's presentation of psychology is divided into two parts. Part I. is entitled 'Fields of Psychology,' and discusses in four chapters —96 pages—Animal Psychology, Individual and Applied Psychology, Abnormal Psychology, Social and Racial Psychology. Part II. is entitled 'Normal Human Adult Psychology,' and presents the ordinary topics discussed in an introductury textbook in the following order: Attention, the Nervous System, Reflex Action and Instinct, the Emotions, the Affective Processes, Sensory Processes, Imagination, Memory, Thinking—an order of treatment that has much to commend it. Of course it is open to any teacher to begin with Part II., and take Part I. later, and we fail to see that any other way of using the book is possible, if the course is intended as a serious and systematic course in psychology rather than a course of popular lectures on psychology. To begin with the concrete is sound pedagogy. To begin with the near, the familiar, and the simple is another equally sound pedagogical principle. In trying to follow the first, Prof. Hunter can hardly have had the second in his consciousness at all. Animal Psychology, followed by Individual Psychology—the Binet-Simon Tests and the like—and Applied Psychology in Medicine and Industry, and that followed by Abnormal Psychology, and Social Psychology, all without any preliminary treatment of Psychology as such—this might produce the student with a good deal of superficial information about psychology, but is hardly calculated to produce the psychologist. Indeed it is all just a little suggestive of Alice's grin without the cat.

There is nothing to be gained from a detailed criticism of Part I. Covering the ground it professes to cover in 96 pages is obviously quite hopeless. The result of the attempt is a series of episodes, some of them recounted in a very interesting way, interspersed with such remarks as "it must be conceded we have omitted many important topics," or "although the topic is of absorbing interest, it must be passed by without further comment". Part II. is much better, though it suffers from being squeezed by Part I. Several of the chapters are excellent as résumés of the results of recent experimental work, and contain many things not usually found in the introductory psychology textbook. Especially is this the case with respect to the chapters on the emotions, the affective processes, and thinking, but even in these chapters a little more care might have been taken to make the descriptions of the experimental work cited clear and accurate. Some notable omissions there are, the most important being the psychology of language. The point of view is predominantly behaviourist. It is true the author professes in the preface a "combination of behaviourism and structuralism," but the 'structuralism' represented is sensationalism, interpreted objectively as far as possible. "By a state of consciousness we shall understand anything of which I am immediately aware—a book, a table, a colour, a pain, my hate, a joy, a memory, or a thought." Comment is needless. In such psychology real introspection is obviously at a discount. But is it psychology? The only thing that gives it the semblance of psychology is the use of terms, which, from the consistent behaviourist point of view, must be quite meaningless.

JAMES DREVER.

An Introduction to Modern Logic. By RUPERT CLENDON LODGE, M.A., Assistant Professor of Philosophy in the University of Minnesota, some time John Locke Scholar in Mental Philosophy in the University of Oxford. The Perine Book Co., Minneapolis. Pp. xiv, 361.

The author tells us that what he means by Modern Logic is what he finds, for example, in the views of Lotze, Bradley, Dewey, and Wundt. He purposely omits "Aristotelian" and also Symbolic Logic, seemingly for the sake of securing unity in his introductory treatise.

Thus what he offers is a plain account of Judgment, Inference, and the Method of Science, in three successive books, without any reference to logical technicalities, excepting such general terms as analysis, induction, identity, organisation. His plan, I think, is a good one.

What he is really doing throughout is to trace, in successive ranges of expansion, the process of introducing in connexion with sensory data the intellectual "ideals" or "standards" of "identity," "difference," "internal" and "external organisation".

In the first Book these are applied successively to the four types of "perceptual," "experiential," "symbolic," and "transcendent" judgment (I think here we are on thin ice philosophically speaking, but the author is not intending to deal with philosophy); and in the second and third Books respectively to the theory of inference and to the method of science; in both of which they develop into accounts of synthesis and analysis, and other factors of method. The description of the method of science is the longest part of the work, and obviously follows the headings of Wundt's *Allgemeine Methodenlehre* (chapters i. and ii. of his *Logik*, vol. ii.). Proof, *e.g.*, is separated from inference and discovery, and treated as a method of exposition. I think the sub-division and lengthening of the book thus effected is unfortunate, for the book is long considering its character, though it is in appearance a small volume. I wish the Method of Science could be omitted, and its best chapters, xxi. and xxvi., where there is a good account of analysis and synthesis taken together, and so too of induction and deduction, fused with the account of inference in Book II.

In the pursuit of knowledge through the application of the "ideals" or "standards" we construct "mental models," *i.e.*, mathematical or causal schemes intended to interpret this or that set of data; and these may have perfect validity ("objectivity" and "completeness") when applied to "mind-made entities" (anything from a puzzle-box to a triangle), but there is always a gap between them and "natural phenomena". All this raises problems which I cannot now discuss.

The illustrations are extraordinarily copious and ingenious. One, for instance, points out that a cipher may have a group of five letters to each letter indicated, so that if you begin by analysing it into single letters your analysis will be wholly irrelevant. They are a good deal drawn from the psychological laboratory, where, it seems, you have puzzle-boxes, "artificial crimes," and many other dodges. The mathematical beginning of a science is illustrated by a trick in experimental æsthetic. You have a celluloid dachshund, which you can lengthen and shorten at pleasure by an apparatus which admits of exact measurements in millimetres. The problem is how long a dachshund should be *ceteris paribus* in order to give the most æsthetical satisfaction. You collect judgments and treat them mathematically, and so make a beginning of "experimental æsthetics". These illustrations partly suggest what the author means by "mind-made entities".

I think, on the whole, the book is stimulating and suggestive. Only the attempt at extreme precision, by the repetition of the same standards all but verbatim for each successive topic, leads, I must hold, to needless repetition. You are told three or four times over in the theory of judgment that if you have mere identity, judgment disappears.

BERNARD BOSANQUET.

The Philosophy of Fine Art. By G. W. F. HEGEL. Translated with Notes by F. T. B. OSMASTON, B.A., Author of the *Art and Genius of Tintoret.* London: Bell & Son. 4 vols. Pp. xxii, 405; xiii, 401; xv, 430; xix, 356. 25s. net.

I never expected to see Hegel's Lectures on Æsthetic in an English translation. It must have been a work of enormous labour; and Mr. Osmaston and his publishers have earned the gratitude of all devotees of æsthetic philosophy.

The book is enormously long, and the novice might be inclined to disparage it in comparison with, *e.g.*, Croce's philosophy of art which can be read with pleasure in a day or two, or with heaps of special textbooks fully up-to-date. On this head I feel no doubt at all. Certainly all students will familiarise themselves with Croce's work; but if they want a thorough and solid foundation for the idea of "expression," neglecting neither what is to be expressed nor how it passes into expressiveness, I believe they will find what they want, thoroughly and completely, in Hegel alone. Hegel does it all himself; he refers to no textbooks—I suppose there were hardly any to refer to—about history, or religion, or special arts, or light and sound, or verse and metre. No doubt his views on particular points are often antiquated; but you feel that he has worked through the whole detail with wonderful insight, and you cannot safely throw aside his treatment of any problem. His delight in Shakespeare is charming.

The very full table of contents, of which Mr. Osmaston has completed the defective parts, in itself no small service, will assist a reader in turning his attention to points which specially interest him, and there is no harm in saying that he will do well, if he is able, to look up the decisive passages in the original. I find this to be so really with almost all translations, especially in philosophical matter.

To anyone approaching the work for the first time, I should suggest a reference to vol. ii., p. 391 ff., for Hegel's "really splendid defence of modern art," as a very capable art-student described the passage to me the other day. I wish Mr. Osmaston had boldly rendered the striking phrase that modern art "Zu ihrem neuen Heiligen den Humanus macht," by some such words as "adopts 'St. Man' for its saint of to-day". And a comparison of this with vol. i., p. 142, tells us at once the truth about the idea that Hegel held fine art to be a thing of the past.

Mr. Osmaston, I am bound to admit, is not always accurate in translation. But his evil destiny befalls him mostly in matters of historical reference and illustration, which matters little to the philosopher. I do not know how he came to write Hesiod for Herodotus (vol. ii., p. 167), nor, obviously, in a footnote of his own (vol. i., p. 367) the "Merchant of Venice" for "Romeo and Juliet"!

The frontispiece is a fine engraving of the well-known medallion of Hegel.

BERNARD BOSANQUET.

The Foundations of Music. By HENRY J. WATT, D.Phil. Cambridge: University Press, 1919. Pp. xvi + 239. 18s. net.

"In this volume," the author tells us, "I have sought more or less evenly to serve the purposes of both the psychologist and the musician. In order to make the work complete in itself up to a certain point I have traversed the ground covered in the psychological part of the earlier volume [*The Psychology of Sound*], omitting only those parts that are of little interest to the musician. . . . Those who are familiar with the previous volume will hardly find anything new before chapter ix., p. 55," (pp. viii, ix).

Those who have read Dr. Watt's previous book will recall that he supposes that tones can be arranged in a series of diminishing 'volumes,' which vary inversely with the pitch of the tones. By volume he means "that difference between tones of different pitch that makes the low tone great, massive, all-pervasive, and the high tone small, thin, and light" (p. 6). He supposes that "the pitch of a high tone lies a little to one side of the pitch of a tone just lower in pitch; and the pitches of all tones together form a single linear series, having the tone of greatest volume at one end, and the tone of least volume at the other" (p. 10). According to Dr. Watt, it is the 'balance' between the volumes of two tones that determines their fusion or consonance. On these hypotheses he connects the inversions of a chord with the continuity of 'pattern' made possible by the 'volumic' relations of the octave and of the intervening intervals.

Dr. Watt is on firmer and more satisfactory ground when he comes to deal with the rule forbidding consecutive and (later) 'hidden' octaves and fifths and the minor restrictions imposed on the sequence of other less consonant intervals. He arrives at the important conclusion that the offence is greater, the more consonant be the interval.

He applies the word 'symphony' to the tones of an interval that "tend to become indistinguishable through too much unitariness or fusion" (octaves, fifths, fourths); the word 'diaphony' to the tones when "they sound through or against one another, disturbing and confusing one another" (seconds, sevenths); and the word 'paraphony' to the balance of simultaneous tones "so that melodies formed of such intervals will flow evenly side by side, the one [melody] not inhibiting the apprehension of the other" (p. 155) (thirds, sixths). Now music, argues the author, has developed from melody—from melodic movement. It has evolved to reach the present "great era of polyphony, of which the essential problem is the construction of concurrent melodic streams that will leave each other's motions unimpaired and produce effects of arrest as they may be desired" (p. 213). It is to prevent such arrest, Dr. Watt believes, that the use of consecutive octaves and fifths are forbidden, their extreme consonance (symphony) destroying distinguishability.

So too, "the reason why similar motion is so often forbidden . . . is not that such motion is a bad method in itself, but because it is ineffective to remove the undesirable characteristics of the intervals concerned" (p. 207). On the other hand, contrary motion serves to reduce the symphony and diaphony to the desired state of paraphony. The same need for paraphony determines the tendencies and possibilities of the resolution of dissonances and it explains the difficulties created by the fourth from the bass (owing to the proximity of the fourth to the paraphonic third).

Dr. Watt lays stress on the importance of a future statistical analysis of the exceptions to the 'rules' of musical composition, and on inquiry into the factors that modify the paraphonic properties of intervals. He

considers that "the study can now be taken over by the musician himself and pursued without the further help of psychology . . ." (p. 225).

The Infinite Attributes of God. By Rev. W. Powell, M.A., B.D. London: Arthur H. Stockwell. Pp. xxvii, 220.

After a short Introduction the author proceeds to treat of God's Omnipotence and Omniscience, and then discusses Temporal and Spatial Infinity, God s Qualitative Infinity, and Infinity of Being. In the course of the book he passes rapidly from one problem to another, dealing with many theories by the way and trying to meet objections to his own views. Mr. Powell shows a good deal of philosophical knowledge, and writes clearly. He accepts the statement that God is Ground of all existence and perfect in His Nature. The reality of a Perfect Being seems to the author to be assured by the universal rational ideal of perfection. The existence of good, it is argued, proves the existence of a Complete Good, and morality logically necessitates the existence of God. There is a failure here to distinguish a postulate from a logical deduction.

God's Omnipotence and Omniscience follow from His Perfection. To be omnipotent does not mean to be able to harmonise what is contradictory, and from the moral point of view there are things God cannot do. But His power is not fettered by any alien element, and His ability depends solely on His Nature. Omniscience is implied in the divine moral perfection. As God creates all things, He knows their nature and what will issue from them. Nor is it otherwise with man's action: it proceeds from his nature and so is foreseen by God. Presumably Mr. Powell does not hold that man's evil nature is due to God, and, if so, his argument is defective. He suggests that evil of the positive kind is "explained by the absence of some good" (p. 91), but afterwards we are told that moral evil is not mere defect, it is something positive (p. 203). When he comes to speak of spatial infinity Mr. Powell interprets Omnipresence as the consciousness of all material facts and processes, which, from a religious point of view, seems inadequate. In his last chapter the author states revelant objections to the theory that God is the Absolute and includes in His personal Being all other persons. But his criticism does not always allow sufficiently for the view that there are degrees of reality within the whole.

Mr. Powell's arguments, if sometimes acute, are not very convincing. He raises many questions and passes quickly from them without conclusively settling them. Occasionally the difficulties he deals with are curious. For instance he considers the objection that God may be surfeited with good! (p. 117).

G. G.

Why Do We Die? An Essay in Thanatology. By Edward Mercer, D.D. London: Kegan Paul, Trench, Trubner & Co., 1919. Pp. viii, 202.

Bishop Mercer, in this little volume, deals with an interesting problem, and that in a clear and suggestive way. The style is simple and attractive, and though the form of discussion is popular it is based on sound philosophical knowledge. The writer only treats the question of immortality by implication, and does not seek directly to raise theological issues. He begins by showing that the fear of death has been greatly exaggerated: it is not death but the 'will to live' which causes suffering. Dr. Mercer goes on to consider the teaching of science on the subject, and discusses among other matters "Senescence" and "What Fixes the Term of Life". The latter, he holds, is not explained by nature's care for the species but by the constitution of

the organism itself. This leads him to develop his own view of the organism, which he interprets on monadistic lines. The constitution of the body as a complex of monads shows us both why death supervenes and why there is a good hope of survival. In this section the case for monadism is put skilfully and persuasively. The concluding section, entitled Higher Aspects, though interesting, is somewhat slight and sketchy.

The value of monadism as an interpretation of the organism need not be doubted, but Dr. Mercer seems to think it explains the material phenomena of life, which may be questioned. And he rather assumes than proves that the connexion of monads forming an organism must be a temporary one. On this view would not the 'spiritual body' be also temporary?

G. G.

Mind and its Disorders. Textbook for students and practitioners of medicine. By W. H. B. STODDART, M.D., F.R.C.P. 3rd edition, with illustrations. London: H. K. Lewis & Co., Ltd., 1919.

"Since the last edition," says Dr. Stoddart, "I have fundamentally changed my attitude towards mental disease, having personally investigated very many patients by the psycho-analytic method and thus been convinced of the truth of Freud's doctrines. Mental disease can only be understood by studying the psychology of the unconscious mind of patients, and the physical manifestations of a functional nervous disorder must be regarded as secondary, not primary, as I taught in the first edition." For the psychologist, the chief interest of this statement about the growing influence of Freud lies in the fact that the change of attitude is due to experience of the method. The violence of the antagonisms between the Freudian and anti-Freudian "schools" still continues; but the important point is that the theories of repression, fixation, dream symbolism, and the rest, are being steadily put to the clinical test, and the war has furnished immense masses of new material for treatment. Many orthodox alienists still "resist"; but many others are persuaded that there is definite value in Freudian methods. Dr. Stoddart, who gave a fairly prominent place to psycho-analysis in his first two editions (noticed in MIND at the time) has made a few modifications and rearrangements in the present edition. That a third edition should be called for shows that the book continues to serve a useful purpose as a practical textbook of insanity. There are still many "insanities" that seem to elude either classification or precise description; the classifications continue to shift and alter; but, in a large part of the field, nothing else is at present possible. As in every other field of medicine, so in the insanities, we almost never "get in on the ground floor".

W. L. M.

The Mastery of Nervousness Based upon Self Re-education. By ROBERT S. CARROLL, M.D. 3rd revised edition. New York: Macmillan & Co., 1918. Pp. x, 348.

Nervousness and the need for its mastery must be very widespread; otherwise this book could not have reached a third edition in a year and a half. It is a popular exposition, decorated with a rich rhetoric suited to its purpose. It may be taken as a series of intelligent scientific sermons whose rationalising factor is the idea that harmony of the self may be obtained through adjustment, through the sublimation of strife. The chapters include a definition of nervousness: "Nervousness, then, is truly a mental, not a physical, illness. Nervousness represents a high

capacity for response to external and internal stimuli, with lack of selective and inhibitory control" (p. 16); types of nervousness—the motor type, the hyper-sensitive type, the hypo-chondriacal type, the self-centred type, the repressed type; also chapters on eating errors, the penalty of inactivity, work, play, tangled thoughts, emotional tyranny, the training of will, rebellion, surrender, sublimation of strife, fulfilment of self. The exercises suggested, both mental and physical, have the ring of practical sense and, although in many places the discussions are somewhat vague, the book is stimulating and should be of real service to many. It is set in the key of many other popular products of the more recent applied psychology. It is persuasion rather than science.

W. L. M.

Sommario di Pedagogia come Scienza Filosofica. By GIOVANNI GENTILE. 2 vols. Bari: Laterza, 1913. Pp. xi, 270, 246.

La Riforma della Dialettica Hegeliana. By GIOVANNI GENTILE. Messina: Principato, 1913. Pp. viii, 306.

Principii di Etica. By LELLO VIVANTE. Roma: Maglione e Strini, 1920. Pp. viii, 313.

Morning Knowledge: The Story of the New Inquisition. By ALASTAIR SHANNON. Longmans, 1920. Pp. xiii, 366. 14s. net.

The Philosophy of Giovanni Gentile. By Prof. J. A. SMITH. Aristotelian Society, 1919.

All these writings belong to a certain new departure in European philosophy. At the very least, they amount to an enthusiastic popularisation of idealism; but they claim a good deal more, and that is, to form a body of doctrine in which idealism, without losing its traditional basis, would compete with the ideas of Bergson and the Pragmatists, and would satisfy their principal demands without adopting their errors.

I cannot here attempt a serious review of works which merit so much individual attention. I only wish at this moment to note their common character, and to suggest the line of criticism which they seem to demand, on a first study, though by no means a careless one. I may observe that the same movement includes the works of Benedetto Croce, which I have discussed on other occasions, and to which very similar observations are applicable. The idealist of a divergent type finds in these thinkers much to attract him. To begin with, he finds reawakened the explosive force of the old doctrines; he feels in their advocates a revived fire and pugnacity. The old lesson of Hegel and his sympathisers—that the universe is a single spirit, of whom or of which all appearances are manifestations; that all its manifestations fall within a single experience, compact of experiences; that all of it is life and activity, and outside this living experience there can be nothing—this lesson is here rehearsed with an energy and a passion for which any idealist must be grateful, who rejoices to see his central point of view triumphant in a notable section of the philosophical world, and also for a considerable distance beyond its borders.

But the new doctrine has a further side, to which the ardour of its advocates is largely due, and which may be less welcome to any one who seems to himself to have learnt in a wider school. In its descriptions of the living experience which is the real universe—if it is indeed conceived as a universe—unwonted language is met with. Reality lies in the thinking, never in the thought ("pensato," passive participle); always in the "pure act" of thought ("pensiero," noun). It is self-creative, creative of truth, and ultimately and in itself progressive. This is the "nuova

metafisica della mente" (*Riforma*, 43, 291) which Croce contrasts with the "metafisica dell' ente" (*Teoria e Storia, Filosofia dello Spirito*, iv., 280). The old recognition that truth has an immanent quality, and cannot be determined by an external standard, is present throughout as if a novelty, and is intensified into the doctrine that truth and fact spring spontaneously from creative thinking, and that thus reality is in itself a progress; a progress, therefore, *ad infinitum*, for its dialectic depends on no immanent whole; and always for the better, being inspired by its own indwelling *élan*. "No transcendence of experience, no pre-existing real," are the negative watchwords. The pure act of thought, in its development and self-interpretation as history passing into philosophy, is the type and centre of reality. The creative synthesis *a priori* is its ultimate nature and its only category. Subject, object, and their union are the only terms of its dialectic. Of Hegel's or Bradley's world of appearances the greater part by far is simplified away. Thus (though religion is nominally a term in the progression as representing pure consciousness of the object) "religioni" says Gentile, in full accord with Croce "le quali a rigore non sono se non forme inadequate di sistemi filosofici; filosofie immature——"[1] We hear such language to-day not without surprise.

In their view, a definite saltus from old to new philosophy begins with Vico's revolt against Cartesianism, and the new movement comes to its rights in Kant's synthesis *a priori* and Hegel's logic; the latter of which needs only drastic simplification, and a liberation from much inherited lumber—that is, from its grasp of actual experience—to become this new philosophy, advocated with passion and with a considerable display of learning. I have my doubts, as I have said before, as to the soundness of insight manifested in this learning, though it is certainly based on careful and serious study. It is, for instance, a shock to the student of Plato, to find that because of the doctrine of Forms, he is held to be the representative of a theory of pre-existent, transcendent, and immutable reality, forming a second world over against the world of human knowledge, which has no function but to copy it. Thus "Platonising" dialectic and metaphysic, are treated wherever mentioned, as "the dialectic of death," and as the "old" or exploded metaphysic. And it is assumed as obvious that "l'uomo antico si sentiva malinconicamente diviso dalla realtà, da Dio; l'uomo moderno sente in sè Dio".[2] We know that it is wrong to look to Plato for modern idealism; but that he laid the ghost of the two-world theory, and initiated the impulse which led in Christianity to the idea of human-divine unity, I should have said was certain. I do not think that these scholars, learned as they are, have full and genuine sympathy with the Hellenic mind.

Thus the comprehensive reality as indicated by Hegel's or Bradley's idealism, with the diversified life of its various appearances, all having their rights and all pointing to the whole, but no one of them identifiable with it *in propriâ personâ*, is exchanged for a view in which the temporal thought-process, a progressive stream, actual in the human spirit and in the succession which forms its history, is the prerogative reality; and the other aspects of our rich experience all collapse, as it were, into the flux of history and its interpretation by philosophy. A single history, noticeably and emphatically centred in the human mind, whatever in addition it may imply,[3] replaces the "Absolute," "which has no history of its own, though it contains histories without number".[4]

[1] *Riforma*, p. 116. [2] *Ibid.*, p. 76.

[3] Croce certainly allows some implication beyond the series (*Filosofia dello Spirito IV. Metodologia*).

[4] Bradley, *Appearance*, p. 499.

In this impression I am chiefly referring to Croce and Gentile, and to the striking account of the latter offered by Prof. Smith in his Aristotelian paper. I differ from Prof. Smith with the greatest hesitation and reluctance; but I must set down the fact that as in Croce, so in Gentile's *Pedagogia* (a treatment of philosophy as the formation of souls), and in his *Riforma*, I am continually shocked by what seems to me to be overstraining of undeniable truths—the conversion of familiar platitudes into untenable paradoxes.

Take the very first case of creative knowledge from the former; "conoscere la poesia del Petrarca significa fare quella poesia nè più nè meno di quel che l'abbia fatta il Petrarca".[1] Surely this is over-strained. It contains an obvious truth, that our receptivity is creative; but, surely, an obvious falsehood, as if the poetry were not already a special appearance of the spirit, appealing readily and peculiarly to the kindred spirit in man. And so I find it throughout, especially in the *Riforma*. There is, as Prof. Smith explains, a thought belonging to the "noi," and here, in this and its implications, if I understand aright, really lies the whole and the universe. But, then, surely, *this* is an implicit real, and the "attualità" of the "atto puro" is gone. The thought which is reality cannot be the process of philosophising, as Green wisely warned us long ago (*Works*, vol. iii., p. 143). The fact is, "the whole" cannot be, *in our sense*, a thought at all. It is a whole which lives in all its manifold appearances, and cannot be reduced to any one of them. The conception of a self-creative progressive real, which is pure thinking, destroys all meaning in "the whole". There *is* no whole, and the unending dialectic has no mainspring.

Morning Knowledge shows much agreement with Gentile, though I suppose the author to have been wholly unacquainted with his work; and the coincidence is certainly suggestive. It is a very remarkable book written by a British officer when prisoner in Turkey. In form it is narrative, conversational, fantastic, rhapsodical. It is impassioned and sincere, and shows much insight. I naturally regret its contempt for logic, and venture to hope that the gifted author will bring the sides of his thought more into connexion in years to come.

The gist of the work, which it is a shame to treat so baldly, lies if I follow it right, in drawing out into a historical flux the familiar philosophical view of the Christian scheme of salvation, embodying in it stages in the development of a finite God, and his passage, and that of all creation, to perfection by human aid. It is strongly creationist, insisting for example on the senses as creative and not receptive. Its word "fiam" corresponds to Gentile's "farsi". Like Gentile too it wholly rejects the "pre-existent" real or God. The world of space and time is, it would seem, to disappear in the end; whether literally, or only from a higher insight, I am not sure. It is very important that the actual progress makes possible and demands the attainment of individual perfection and apparently the ultimate negation of the unending process. Of course if progress is the main fact of the universe, there must be this difficulty; either it really leads to a *terminus ad quem* and contradicts itself, or it goes on *ad infinitum*, and then a doubt arises in what sense it is truly progress. The mode of thought we are discussing illustrates these difficulties throughout, and forbids the solution which the idea of religion would offer.

Morning Knowledge is inclined to write over its lecture room "No

[1] *Pedagogia*, vol. i., p. 8.

admission to any *not* ignorant of mathematics".[1] This again coincides oddly with a prejudice which characterises the movement as far back as Vico. The side of discovery in mathematics seems not to be understood, and its connexion with space, I suppose is exaggerated.

Signor Lello Vivante is thoroughly with Croce and Gentile in their creationism, and having made some study of English writers, censures both Green and Bradley for treating God and reality as pre-existent (già data). I almost venture to suspect that there is here, as throughout the movement, perhaps especially in its estimate of Plato, some ambiguity as between transcendence of experience and transcendence of immediacy.[2] The latter, of course, all thinkers must recognise and employ; and I think there is a tendency, as in Bradley's critics at home, to impute the former when only the latter is present.

But Signor Vivante is an original writer. His account of reason as one with "il più vasto amore" is fine. His emphasis, too, perhaps following Maeterlinck, on modern sensitiveness to the value of silence, recalls an important development in *Morning Knowledge* (where silence is the creative mood) and of course much that is noteworthy in the religious thought of to-day.

His ethics is an analysis of the modes in which the universal is present in the individual. "Non siamo noi che viviamo, ma vivono le nostre ragioni; e quanto più è presente nella creatura la creazione, il principio o esigenza infinita . . . tanto minore realtà ha per noi la morte."

I do not at all deny that idealists have much to learn from the energetic and uncompromising attitude of these great Italian thinkers; and naturally I believe that all who are not idealists have *very* much to learn from them. But for myself I cannot follow the point of view which proceeds from the immanence of reality in experience, to the universe as self-creatively progressive by a pure act of thought in the human spirit. The question for me is "*What is* the spirit?" Is it not something larger than the pure act of thought? Does it not live, really and characteristically, in the splendour of external nature as in religion and in the common will, and are all these a mere deposit or fossilisation of pure acts of thinking?

BERNARD BOSANQUET.

La guerra eterna e il dramma dell' esistenza. By ANTONIO ALIOTTA. Naples (1917). Pp. 217.

A brief and eloquent sketch of an ethical philosophy by Prof. Aliotta whose name and merits will by now be, I trust, familiar to most readers of MIND. In most respects Prof. Aliotta's present work follows the lines that one would expect in the author of *La Reazione idealistica contro la Scienza*. There is the same repudiation of materialism and mechanistic interpretations of the world and the same vigorous defence of spontaneity and contingency. But on one important point Prof. Aliotta has gone over bag and baggage to the camp of the Pragmatist hustlers. The "epistemological proof of the existence of God," which was worked into the English edition of *La Reazione idealistica contro la Scienza*, has disappeared, and we get instead violent diatribes against Theism as only

[1] *Cf.* "As Renan has remarked, the modern philosophical school should have as its device 'Let no one enter here who is not acquainted with the human spirit,'" Kemp Smith, *The Present Situation in Philosophy*, Inaugural Lecture.

[2] Bradley, *Truth and Reality*, p. 153.

fit for the "weak" and "infirm in spirit". The author's present view is that the universe is after all a magnified counterpart of one of the "fronts" in the great war, a scene "swept with confused alarms of battle and flight, Where ignorant armies clash by night". What order there is in the Universe is only born of the struggle for existence (or perhaps one should say, for domination) between utterly self-centred and self-willed "souls". Whether order and good will prevail or succumb, we do not know, and Prof. Aliotta seems to think that if we did know, since life would cease to be pure adventure and haphazard, it would lose all its spiritual value. I own I cannot see much more in Prof. Aliotta's pleadings for his new creed than a temporary aberration begotten of war-fever. It is true I am not surprised that his "gnoseological proof" of God's existence has failed him, for I have always thought it the one serious blot on an otherwise great work. But his present arguments for Atheism strike me as no better than the worst arguments ever put forward for Theism. In the main his contention is the old one that if God exists all that happens must be predestined from all eternity, and therefore our moral conflicts are only stage-warfare. "The fight is fought, the victory won," as the Easter hymn says, and therefore it cannot matter what we do or refrain from doing. I should have thought it a sufficient retort that even if the victory of good in the world is certain, it depends wholly on our own doing whether *we* share the "song of them that triumph" or the "weeping and gnashing of teeth" of the defeated fiends. As for the general arguments for Predestinationism, I take it that when Prof. Aliotta was a year or two ago "proving" the existence of God, he was well aware that orthodox Christians do not believe that God's omnipotence and omniscience are incompatible with human freedom, and that he then agreed with the Christians. I cannot see that he adduces any reason for his change of view beyond the statement that if there is a divine mind, whatever that mind thinks of must *eo ipso* be existent fact. *I.e.*, if God exists, He can only know propositions which assert the existence of the subject-class. I cannot myself see any reason at all for this doctrine, and I think my honoured Italian colleague would have done well to ponder the discussions of the question about God's knowledge of *possibilia* in the great scholastics before committing himself to it.

Nor do I see that Theism is a refuge for the "weak". They were not weaklings who inscribed on their banners such devices as "Fight the good fight," "Quit you like men," "Put on the whole armour of God," "Remember Christ Jesus who . . . witnessed the good confession," and a hundred more. I fear Prof. Aliotta has hurriedly confused assurance that victory will come with assurance that a particular soldier will come untouched out of the fighting. And I am sure that he is dangerously near a deadly moral error when he seems to argue that good derives all its value from the fact that some souls are ready to fight for evil. This is to deny that there is any intrinsic difference between good and evil. For, if values are simply created by the conflict, it follows that whatever any souls are ready to fight hard for must be very good. Nietzsche will be right in saying that a good—*i.e.*, a stubbornly-waged—fight sanctifies *any* cause. Yet Prof. Aliotta himself plainly does not believe that the cause of Austria against Italy is a good one, though he would no doubt admit that the Austrians are stubborn enough in fighting for it. I am still more amazed that a philosopher of his calibre should propose to say "not to God but to man, Thy will be done in heaven as it is in earth". (Though *if* the prayer only means that the will of good men is to be done in heaven no more effectually than it is being done on earth in the welter of war, the petition is quite a modest one.) I am sure that if

Prof. Aliotta had found this utterance, as he well might have done, in a Comtist work, he would have asked the pertinent question to what actual man or body of men a good man would ever address such a prayer without serious qualification. Is humanitarianism to end by bringing us back to the adoration of a "dominus et deus noster Domitianus"? Whether this prayer is ever likely to be answered, as Prof. Aliotta himself suggests it may be, by the development of science to the pitch at which we shall be able to modify the earth's orbit to suit our own tastes, or combine with souls dwelling in the abysses of space to achieve yet greater marvels the Professor's readers will judge for themselves. To myself Prof. Aliotta's incredulity about God seems only to be matched by his unlimited credulity where Man is concerned. But I should not be surprised if, when the fit of war-fever is over, the Professor recants his doctrine. I may add that there seems to me to be a fundamental confusion about a vital point in the argument. It is declared in an early chapter that all souls must be eternal and unoriginate on the ground that nothing is real but what is experienced, and the "birth" (or "death") of a soul can be experienced neither by the soul in question nor by any other. (For, *ex hypothesi*, the soul which is "born" (or "dies") is not there to experience anything before (or after) the process of "birth" (or "death") is complete, and any other soul could only experience the "outward and visible signs" of the event, not the "being born" or "dying" itself.) But when we come to the pages which expound the process by which the blind "struggle" creates order and progress it has to be assumed that such events as the "fusion" of the "souls" of distinct "cells" into one are of constant occurrence. Does not such a process amount to the "birth" of a new soul and the "death" of an old one? And who in such a case "experiences" the process from within? The argument of the earlier chapter may be turned against its author. For the soul which is "fused" or "absorbed" cannot experience its own absorption unless it can be still there after its "death," and the other soul which is enriched by the fusion cannot experience it from within. Prof. Aliotta cannot really have it both ways.

A. E. T.

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VII.—PHILOSOPHICAL PERIODICALS.

PHILOSOPHICAL REVIEW. Vol. xxviii., No. 6. **W. M. Urban.** 'The Nature of the Community.' [Defends a modified form of the over-individual and monistic conception of community. From the standpoint of meaning, the psychological mode of the organic formula, with its significant assertions of what the social order is not, is the most adequate we have; and the omnicompetence of the state means simply its concern with the ethical minimum, its final authority in some things which affect all elements of the community.] **H. J. Laski.** 'The Pluralistic State.' [The monistic state is a hierarchical structure with power collected ultimately at a single centre. Advocates of pluralism contend that this is administratively incomplete and ethically inadequate. Decentralisation is the only preventive of consistent degradation of freedom and the only effective cure for undue localism of ethical outlook.] **M. P. Follett.** 'Community is a Process.' [Community is a creative process of integration, with neither absorption nor compromise. Society is neither an organism nor a collection of units, but the whole which lives in every one of its members and of which every one of its members is potentially the whole.] **J. H. Tufts.** 'The Community and Economic Groups.' [Economic ends and powers are coming to play a relatively larger rôle, political (and religious) ends and powers a relatively lesser rôle, in the life of the community. There are three possibilities: society may extend its political organisation, negatively by restricting economic inequalities or positively by assuming economic functions; it may favour the economic group and embark on syndicalism; or (and this is the most promising road) it may delegate to economic groups as committees responsible functions for certain purposes.] Discussion. **M. W. Calkins.** 'The New Rationalism and Objective Idealism.' [Spaulding has ignored the self, and makes his point against objective idealism only by stating the doctrine so that it presupposes the existence of many entities externally related.] **E. G. Spaulding.** 'Rejoinder.' [The self is a highly equivocal term; and whether terms are related internally or externally, it is the fact that they are related that furnishes the idealist with his problem.] **M. F. Washburn.** 'Dr. Strong and Qualitative Differences.' [The principles of physical science can easily account for the illusion of simplicity and continuity where reality is atomistic, but not for the illusion of qualitative differences where realities are qualitatively identical.] Reviews of Books. Notices of New Books. Notes.—Vol. xxix., No. 1. **N. K. Smith.** 'The Present Situation in Philosophy.' [Of the three typical philosophies, scepticism, perennially useful though continually transcended, is now in abeyance. Our choice lies between naturalism and idealism. Naturalism regards man's capacities, even the highest, as intelligible only as they are exercised in subordination to the requirements of his terrestrial environment; we attain absolutism in the intellectual domain alone. Idealism regards man as a microcosm, prefiguring in his art, morals, social institutions and religion, the wider reality which, as finite, he cannot more directly approach; we attain

absoluteness in all these other fields.] **A. K. Rogers.** 'The Case Against Dualism.' [Running reply to objections urged against representationalism by Holt, Bosanquet, de Laguna, Alexander, Woodbridge, Jones, Creighton, James, Russell, Schiller, Leighton, Bakewell, Dunlap, Bradley and Moore.] **J. A. Gregory.** 'From the Old Realism to the New.' [The most impressive type of reality is the animated or conscious external object, and the concepts of mental existence have always been modelled on this prototype. Thought has therefore moved first away from the primary model, defining mental existence by unlikeness to it (Verworn, Freud), though still moulding the mental in the likeness of the external world (the subconscious); and then back again toward the model (Ward, Alexander, Pringle-Pattison, the New Realists), though with like intermediation (Pater's general consciousness).] **R. A. Tsanoff.** 'The Destiny of the Self in Prof. Bosanquet's Theory.' [Bosanquet's critics warn against a possible misapplication of his theory. If we are not to forget the abstraction involved in attending to the 'subordinate individual' *par excellence*, we must also remember the corresponding abstraction involved in attending to the Absolute *par excellence*. The theory as a whole would have been better with more Bosanquet and less Bradley.] Discussion. **J. Lindsay.** 'The Nature of Knowledge.' [Critique of Stout. Current philosophy suffers from the tendency to biologise perception and intelligence, and to treat perception as natural event rather than as perception of natural event.] Reviews of Books. Notices of New Books. Summaries of Articles.

Journal of Philosophy, Psychology, and Scientific Methods. xvi., 21. **L. L. Thurstone.** 'The Anticipatory Aspect of Consciousness.' [It is usual "to refer the anticipatory aspect of consciousness to the conative categories," but if we start from the reflex arc and "consider consciousness as in its essence a process of selecting an adaptive response," we find that "every intelligent response constitutes the conclusion of an act in which an earlier incomplete and unparticularised stage was conscious," and "may define intelligence as the remoteness from the overt act at which the reflex circuit becomes conscious," and finally arrive at the conclusion that "every psychosis actually *is* an unfinished act in the process of being defined into an overt response".] **H. T. Costello.** 'Relations between Relations.' [It is vain to call relations 'internal' because "internality to a thing can have no meaning whatever until you first define your 'thing'". The new realists instead of trying to prove that relations were 'external,' "should have swept aside the whole question with the single comment that 'thinghood' is a vague popular concept".] **H. T. Moore.** 'A reply to "The Defect of Current Democracy".' [*Cf.* xvi., 14. History is appealed to to show that democracy is in fact less repressive of originality than aristocracy.] **H. B. Alexander.** 'The New State.' [A review of Miss M. P. Follett's book with this title.] xvi., 22. **M. T. McClure.** 'Liberty and Reform.' [Subjectivism drifts towards anarchy, institutionalism toward tyranny. But subjectivism always fails, as is proved by the Sophists, the Stoics, Rousseau, the French humanitarians, and the Russian Bolsheviks. In the (improbable) event of his reading this, Lenin would doubtless smile.] **J. B. Pratt.** 'Realism and Perception.' ["Perception is the great stronghold of realism," but neither naïve realism, nor Lockian dualism, nor neo-realism, can give a tenable account of it. There is always either failure to account for illusion or for true perception, or for both, as in 'new realism,' which comes to grief over both Scylla *and* Charybdis. The psychologists mostly endeavour to represent perception as exhausted by sensations and images and shrink from the *meaning*

and *outer reference* of the process. But this is due to their intellectualism; "the percept is there not so much for its own sake as for the sake of guiding our action upon the external environment" and it "*means* more than it is". All these troubles are due to a "confusion of content with object".] **H. H. Bawden.** 'Psychology and Scientific Method.' [Psychology like every science makes play with "guiding fictions"; its "laws and principles are merely our ways of conveniently handling our environment in the effort to shape it to our ends". Among such fictions is 'consciousness,' which the psychologist found "at once indubitable, immutable, indiscerptible and indefinable. He couldn't define it because he was seeking to state it apart from the very processes which alone could give it any content or meaning."] xvi., 23. **L. E. Hicks.** 'Reason and Common Sense.' [Criticises Russell's doctrine of infinity and the juggling by which it is supported, pointing out that "it is only points and instants that admit of genuine one-one correspondence between part and whole. Their amazing capacity for this trick is wholly due to the fact that points have no extension and instants no duration." Concludes that, as ever, "the infinite has been a word to conjure with".] **A. P. Weiss.** 'The Relation between Physiological Psychology and Behaviour Psychology.' [They are not to be identified. Behaviourism is not dualistic nor introspective. Its method is "that of a statistical, genetic, and mechanical analysis of those movements that form the basis of human interaction". Its subject-matter is not 'mind,' but "conduct regarded solely as a mechanical function of the environment and the reaction system".] **M. W. Calkins.** 'Spaulding's Relations and Subsistent Entities.' [Protests against his "identification of the new logic with the new realism," and his subsistent entities, which are neither physical nor mental. For these cannot be defined except in terms of consciousness.] xvi., 24. **W. H. Sheldon.** 'The Asymmetry of Reality.' [All things are 'asymmetrical,' *i.e.*, "composed of units which are unequal in function and value," *ad infinitum*. After suggestively tracing 'asymmetrical control' from stellar systems to atoms and to politics, the author suggests that it obtains because a complete equilibrium is highly improbable and "the only collocations that will be strong enough to survive the buffets of the environment are those in which one or a very few are so much stronger than the rest as to be able to hold several in equilibrium". The result is, metaphysically, a sort of pluralism which does not deny a One, but holds that it may be very unimportant. As gravitation hardly counts as between stellar systems, so with minds; "many minds are no doubt spiritually as separate as the stars".] **N. Wilde.** 'Plural Sovereignty.' [Protests against H. J. Laski and G. D. H. Cole, on the ground that they fail to recognise "the necessary demand for unity in the life of reason".] **D. Drake.** 'Is Pleasure Objective?' [*vs.* W. D. Wallis in xvi., 12, 14. He is accused of perverting terms, confusing the physiological-psychological and the ethical sense of 'pleasure,' and throwing no light upon the selection of 'life-purposes'.] xvi., 25. **M. R. Cohen.** 'Communal Ghosts and Other Perils in Social Philosophy.' [Contributes to a Discussion in the American Philosophical Association on *The Nature of the Community*, an exceedingly clear-headed and pungently-worded protest against the notion that it is high time that philosophers justified their *raison d'être* by rushing into practical politics—on the side which happens to be popular; and beseeches the philosopher to remain impartial and critical—even of his own ability to solve problems which have baffled economists, jurists and statesmen.] **F. J. Teggart.** 'Anthropology and History.' [To get them to co-operate would be as great an advance and revolution as the Darwinian Theory.] xvi., 26. **J. M. Warbeke.** 'Instrumentalism and Teleology.' [The paper "will attempt to throw light upon the meaning

and implication of the idea of purpose as applied to a process of knowledge and then to consider the method known as Instrumentalism". It also attempts to reply to criticisms of E. E. Sabin and R. B. Owen in xvi., 18.] Abstracts of Papers on *The Nature of the Community* by **W. M. Urban, M. P. Follett, H. J. Laski** and **J. H. Tufts,** read at the Meeting of the American Philosophical Association, December, 1919. xvii., 1. **S. B. Goss.** 'From the Common-Sense Level.' [Considers that both anti-intellectualism and science have committed *felo de se.*] **M. Picard.** 'The Psychological Basis of Values.' [Discusses divergences between the accounts of values given by Profs. Dewey and Bush. Recognising that "no thorough-going analysis of values and valuation from a strictly empirical standpoint has yet appeared," and that "the study of values . . . is yet in its youth," he suggests that "the psychological basis of immediate values is to be found in the aspect of feeling, and that of contributory values, in the aspect of cognition".] xvii., 2. **W. Fite.** 'Ritter's Organismal Conception of Life.' [An appreciation of an important work in two volumes by a California biologist on *The Unity of the Organism or the Organismal Conception of Life*, which opposes every theory of 'elements' and insists that the organism is a whole, and as a whole determines every vital function. "Every tissue and every chemical reaction, whatever general features it may have, is also characteristic, not only of the species in question, but of the individual." The organism is not a chemical product, but a chemical laboratory which runs itself in its individual way (*cf.* precipitin tests of blood relationship). Ritter's method is radical empiricism, and so does not shrink from acknowledging creativeness, or even pan-psychism. But, Fite asks, does not this conflict with the conservation of energy?] **F. C. S. Schiller.** 'Truth, Value and Biology.' [*Cf.* xvi., 9 and xv., 19. After criticising W. M. Wells's accounts of 'the pragmatic fallacy,' the meaning of truth and the relation between logic and psychology, goes on to examine the relations of truth and value, and the biological control of truths. It is not true that 'errors' are mutable and 'truths' eternal; actually "it is 'truth' that changes, and 'errors' that persist unchanged from age to age". For 'truths' are beliefs that admit of degrees and shades, varieties and variations, and the relation of beliefs to action is not a simple one, nor can "the general principle that action is the ultimate test of belief . . . be applied to everything that calls itself a belief". The cases of professed beliefs which are *not* enacted, and of 'purely theoretic' beliefs which are not supposed to affect action, are considered, and it is shown that "the testing of beliefs by action fails in the case of *complete intellectualism*". This however renders it difficult to distinguish it from complete insincerity. As for the biological confutation of pessimism, it is evidently not complete, because (? incomplete) pessimists continue to exist. They appear to be adapted to some conditions of life. Life therefore is such that *both* pessimism and optimism are 'true' and rooted in reality. This proves that on this, as on other philosophic issues, the 'real' does *not* determine our beliefs univocally, and the personal bias of the believer can *not* be eliminated. The truth is that "depersonalisation is a *fiction*. It is a fiction, moreover, which conceals from our view all the subtlest and most interesting influences of vital conditions upon beliefs, and renders impossible any coherent and intelligible accounts of the relations of truth and value."] **R. M. Eaton.** 'The Logic of Probable Propositions.' [Concludes that "although specific probabilities like specific truths are to be measured by fact, the laws of combining probabilities into conjunctions, disjunctions, or inferences lie within the realm of pure logic; and that the laws of these fruitful methods of reasoning are intimately related to all other laws of thought".]

THE BRITISH JOURNAL OF PSYCHOLOGY. Vol. ix., Part 2. **Carveth Read.** 'The mind of the Wizard.' [After a general discussion of the rise and decline of Wizardry, the writer gives a psychological account of essential characteristics of the Wizard: (1) Intelligence; (2) Force of Will; (3) Motives; (4) Costume; (5) Jealousy; (6) Histrionic temperament; (7) Hysteria and Power of Suggestion. The existence of scepticism as to the wizard's art is discussed—and of genuine belief in self on the part of some wizards. The various aids to suggestion and persuasion are treated from a psychological point of view.] **Ernest Jones.** 'The Theory of Symbolism.' [Deals with the origin and development of symbols the true meaning of which may be unconscious and with the distinction between metaphor and symbolism proper. Symbols may be significant chiefly for feeling. The following attributes of true symbols are discussed: (1) representation of unconscious material; (2) a constant meaning, traceable in different fields, *e.g.*, dreams and myths, and among different peoples; (3) non-dependence on individual conditioning factors; (4) linguistic connexions—the word-root often betraying a significance now lost in the word itself, but present as subconscious symbolism; (5) phylo-genetic parallels. The primitive or childish tendency to identify very different objects is attributed to three factors: (1) incapacity for discrimination; (2) the pleasure-pain principle (apperception being guided by interest), and (3) the reality principle. Only what is repressed is symbolised, or needs to be symbolised. A critical account of Silberer's treatment follows. The author would confine the term symbolism to cases where there is "affective inhibition" in reference to the thing symbolised.] **Maurice Nicoll.** 'Why is the "unconscious" unconscious?' [The unconscious is the residue not only of the personal experience but of that of the race, including its animal ancestry, and it is unconscious because it is not yet fully adapted to reality; for the healthy conscious mind requires to be closely adapted to reality if the individual is to be successful.] **W. H. R. Rivers.** 'Why is the "unconscious" unconscious.' [As the retention in consciousness of experience as a caterpillar would be worse than useless to the butterfly, so would be the retention in consciousness of infantile experiences to an adult. The unconscious is thus dissociated because it is no longer adapted to reality and so is useless to the individual. The unconscious is closely allied to the realm of instinct while consciousness is closely allied to the realm of intelligence.] **Ernest Jones.** 'Why is the "unconscious" unconscious?' [The unconscious is sometimes better adapted to reality than is the conscious and sometimes worse, but the question is not crucial. Sometimes repression of memories is more harmful than would be their retention. Affective tone is the real reason for repression. The pleasant to the unconscious is displeasing to the conscious. Repression is not solely due to individual training, but is often due to inhibiting forces inherited as a result of experience and selection of preceding generations.]

ARCHIV F. D. GES. PSYCHOLOGIE. Bd. xxxv., Heft 2, bis 4. **O. Kutzner.** 'Kritische und experimentelle Beiträge zur Psychologie des Lessens mit besonderer Berücksichtigung des Problems der Gestaltqualität.' [Critique of tachistoscopic experiments in their bearing on the controversy concerning literal reading and reading by form of combination. New experiments (1) by a combined distance and tachistoscopic procedure, with words and meaningless syllables, and (2) under the conditions of ordinary reading, with meaningful and meaningless texts, majuscule and minuscule script, series of letters, meaningless syllables, substantives, etc., point

alike to the determining influence of form of combination.] **S. Grundland.** 'Reaktionsversuche am Feder-Ergographen: Eine experimentelle Untersuchung.' [Experiments on the simple reaction with the spring ergograph, under five sets of instructions (simple or natural reaction, sensory, motor, extreme motor, muscular), yielded nearly forty types, varying with the attitude of the reactors. Aside from the characterisation of these types, the main result is that Lange's distinction between sensory and motor reaction depends not upon simple direction of attention but rather upon the activity or passivity of the fore-period, *i.e.*, upon the degree of peripheral preparedness. On the objective side there is no simple relation between height and duration of movement and time of reaction, although certain uniformities of correlation may be made out.] **E. Achenbach.** 'Experimental studie über Abstraktion und Begriffsbildung.' [Critique of Grünbaum, and report of new experiments on the positive abstraction of form by an improved procedure. Elaborate characterisation of the (five) different attitudes adopted by the observers. Of the three variables, position, magnitude, colour, position offers the greatest hindrance to abstraction. Two main tendencies are at work: a tendency to provide oneself with ideas of wide associative range, and a tendency toward determinate adaptation; the former explains positive, the latter negative abstraction.] Bd. xxxvi., Heft 1. **O. Sterzinger.** 'Rhythmische und ästhetische Charakteristik der musikalischen Sukzessivintervalle und ihre ursächlichen Zusammenhänge.' [Continued from vol. 35. Judgments of the definiteness (*Ausgeprägtheit*) and æsthetic value of the intervals fall into two groups, paralleling the quantifying moment of tonal volume and the accentuating moment of tonal distance. The bases of judgment are (except for the interval of the second) the same as for simultaneous intervals. The 'form' of the interval depends on the character of the higher single tone, distance and consonance. Rythmical definiteness and æsthetic value must be referred to common causes (attention).] **V. Benussi.** 'Versuche zur Analyse taktil erweckter Scheinbewegungen (kinematohaptischer Erscheinungen) nach ihren äusseren Bedingungen und ihren Beziehungen zu den parallelen optischen Phänomenen.' [First part (technique, facts of observation) of a systematic study. There are no pure or objectless experiences of movement (Wertheimer), though there are very clear experiences of a very obscure 'something'. The most important temporal condition is total time (time between applications of stimuli) over interval (time between stimuli). The magnitude of the illusory movement is practically unlimited; it is a function of spatial separation of stimuli and total time. Reversal of direction of movement depends on the group-apprehension of the stimuli.] **R. Pettow.** 'Zur Psychologie der Transvestie, iii. Zugleich ein Beitrag zur Reform des § 51 St. G. B.' [Police-records of the adoption by men of women's clothing, mainly for criminal purposes. The ultimate motive is the yearning for the unknown and unconventional (Wolzogen); sexual and social conditions play a secondary part.] Bd. xxxvi., Heft 2, u. 3. **W. Mueller.** 'Das Verhältnis der Definitionen zu den Axiomen in der neueren Mathematik.' [A strictly formal study. Expository mathematics needs definitions of concepts, in order to name the objects of its own construction. Investigatory mathematics needs definitions of objects, and the axioms are simply constituents of these fundamental definitions.] **L. Rangette.** 'Untersuchung über die Psychologie des wissenschaftlichen Denkens auf experimenteller Grundlage: I. Die elementaren Inhalte der Denkprozesse.' [Analysis of reproductive, productive and critical thought by the method of questions in the spheres of philosophy, history, mathematics and *Germanistik*. The elementary contents are ideas, schemata, localisations (palpable) and thoughts (impalpable

elements). In the concrete process these elements are very variously interrelated; thought, however, takes always the most economical road from the palpable to the impalpable. The author suggests that, in the teaching of science, the logical explication of the subject-matter might usefully be supplemented by an account of the 'psychological basis' of the teacher's individual thinking.] **M. Nachmansohn.** 'Zur Erklärung der durch Inspiration entstandenen Bewusstseinserlebnisse.' [Consciousness may be represented by three zones. At the centre lies apperceptive consciousness (Wundt's point and field of regard); about this extends hidden or withdrawn consciousness (*Binnenbewusstsein*) in two divisions, the zone of pre-consciousness, capable of apperception, and the zone of Freud's unconsciousness, incapable of apperception. Inspiration then means a variously motived and conditioned irruption of the hidden consciousness into the apperceptive centre, with or without motor discharge. Böhme affords an illustration.] **P. Feldkeller.** 'Ueber Begriffsüberschiebungen.' [Transfer of meaning is due only in small part to spread of feeling. It depends in general upon errors inevitable in the hurry of speech: association and its feelings guarantee correct words and word-forms, but the speaker's thought is on the object of discourse and not on syntax. The mistakes are likely to persist in the language, since they have the advantages of brevity, novelty and expressiveness.] **M. A. Goerrig.** 'Ueber den Einfluss der Zeitdauer auf die Grössenschätzung von Armbewegungen.' [Experiments on the *DL* of duration and velocity, on the comparison of short movements (active and passive, about 6 cm.), on that of longer movements in spatial juxtaposition (active and passive), and on that of long movements with spatial interval (active and passive), prove that estimation of extent does not depend directly upon apprehension of time: in all cases the influence of duration is slight, and disappears with practice. In long movements, that extent is usually overestimated which is traversed with the higher degree of muscular contraction; with extended practice this influence also disappears.] Bd. xxxvi., Heft 4. **A. Hertz.** 'Ein Beitrag zur Entwicklung der Schrift.' [The origination of writing demands a fairly high civilisation (Mexico, Egypt), familiar with pictorial representation. Its symbols are then for some time mixedly sentential, verbal and syllabic; and they have a place in later pictorial representation. Where these conditions and mications fail, the writing (Sumerian) is borrowed.] **H. G. Steinmann.** 'Zur systematischen Stellung der Phänomenologie.' [Critique and appreciation of Husserl's *Ideen*, following in general the lines laid down by Messer and Külpe. Phenomenology is closely allied to descriptive psychology, and has its share (with mathematics) in formal logic. Although its range is less than that claimed by Husserl, it has its distinctive sphere, problems, and methods.] **A. A. Gruenbaum.** 'Untersuchungen über die Funktionen des Denkens und des Gedächtnisses: I. Psychologische Natur der Beziehungserlebnisse.' [Materially or contentwise relations are concrete or categorical; formally or dynamically they are intention or fulfilment. We thus have four modes of relational experience. The categorical intention is (in the technical sense) a content; the concrete intention is a dependent or founded content. The categorical foundation (*Stiftung*) is not content, but functional characteristic of content; it is the psychically experienceable form of the co-ordination of the contents of a given moment; the concrete foundation is purely dynamical, and lacks all orientation towards an object.] **Schuetz und Wittmann.** 'Zur quantitativen Auswertung der Ergogramme.' [Instrumental analysis of the curves shows that it is not permissible to consider the individual heights of lift as comparable; the rhythm of work is irregular, and the time in which the work is done is variable.] Bd. xxxvii., Heft 1. **T. Haering.** 'Beiträge zur Wertpsychologie, insbesondere zum Begriff

der logischen oder Erkenntniswertung.' [Reply to criticisms of Messer and Kraus, and expansion of points made in the writer's earlier papers, vols. xxvi. and xxvii. part i., on the definition of logical or cognitive evaluation, deals in particular with reality and objectivity as further modes of the predication of cognitive value. Part ii., on the general psychology of value, discriminates the genetic and the phenomenological problems and (within this distinction) the intellectual and affective types of value-experiences and the various value-dispositions; discusses the explicit and the implicit forms of evaluation; repeats the denial that values are 'made' or psychologically 'brought into being'; and outlines the principles of a classification of values.] **A. A. Gruenbaum.** 'Untersuchungen über die Funktionen des Denkens und des Gedächtnisses. ii. Erscheinungsweisen des Bewusstseins (besonders der Beziehungen).' [The degrees of clearness of the apperceptive school have no application whatsoever to the consciousness of relation. Westphal's 'levels of consciousness,' on the other hand, lead us to the important distinction between levels of object-formation in the sphere of functions of apprehension and modes of object-structure in the sphere of the correlative functions. The attempt to apply the concept of levels to the functions themselves leaves us with mere analogies to the levels of contents. As to the consciousness of relation, it follows that the two intentions show the levels of formation in the strict sense; the two foundations only in the sense of the analogy and with all consequent limitations.] Bd. xxxvii., Heft 2 und 3. **A. Storch.** 'Zur Psychologie und Pathologie des Selbstwerterlebens.' [Our habitual self-estimation is confident or uncertain, according as the individual experiences on which it rests are direct or comparative. Other types may be distinguished on the ground of motivation: the spontaneous, which takes its cue from our own behaviour, and the receptive, which relies on the attitude of others. The receptive type borders on the pathological.] **M. Binnefeld.** 'Experimentelle Untersuchungen über die Bedeutung der Bewegungsempfindungen des Auges bei Vergleichung von Streckengrössen im Hellen und im Dunkeln.' [Review of previous work and theory; experiments on linear and punctual distances, under various conditions, in light and dark surroundings. In the dark, the estimates are based exclusively upon eye-movements and their sensations. In the light (especially with punctual distances) they are often based upon these movements and sensations. Control experiments in the dark, with exposures of 100 σ, and with consequent elimination of eye-movement, gave an average value for the measure of the differential sensitivity identical with that found in the daylight experiments.] **V. Benussi.** 'Ueber Scheinbewegungskombination: Lissajoussche *S*, *M*, und *E* Scheinbewegungsfiguren.' [Experiments, for the most part stroboscopic, on four complex types of illusory movement: a counter-movement (*S*), dependent on illusory positions due to inadequate experiences of form; a concomitant movement (*M*), depending on the presence of an illusory movement-field; a deflected movement (*E*), appearing when an illusory movement traverses the field of a second illusory movement; and a movement (*A*) dependent on the 'attraction' of neighbouring objects. The attitude of the observer, synthetic or analytic, is throughout of moment for the appearance or failure of the particular illusion.] **S. Kovacs.** 'Ueber das Verhältnis des erkennenden und mitteilenden Gedächtnisses auf musikalischem Gebiet.' [Experiments with meaningful and meaningless musical phrases. Recognitive memory implies a passive attitude and synthetic attention; communicative memory, an active attitude and analytic attention. The two modes of memory often employ different sets of ideas; they are usually unequally developed; and either may appear in the absence of

the other. Practical conclusions (teaching, testimony) are drawn from these results.] **Krass.** 'Ueber eine neue Tasttäuschung.' [Rubber-like feel of the lower end of a pencil pressed and moved upon the finger-tip.] Bd. xxxvii., Heft 4. **W. Moog.** 'Die Kritik des Psychologismus durch die moderne Logik und Erkenntnistheorie.' [Exposition and examination of the arguments against psychologism (in its very various forms) urged by Husserl; by Husserl's opponents (Erdmann, Sigwart, Meinong, Brentano, Lipps); by the transcendental schools (Ewald, Natorp, Windelband, Rickert); and by Nelson, Rehmke, Wundt. The upshot is that logic and epistemology must be kept clear of psychological intermixture, overt or covert, direct or indirect; but that it is foolish on this account to overlook relations and so to fail of mutual assistance.] **O. Sterzinger.** 'Die Bestandstücke des poetischen Bildes unter dem Gesichtspunkte seiner Schöpfung.' [Experiments on the creation of poetic images. Every such image involves the connexion of two psychical formations, usually of perception and idea of the same sense-department, though at least twenty different combinations are attested. The work of association takes place in the unconscious; and the common element itself is either unconscious or attains only the lowest of Westphal's levels of consciousness.] **Krass.** 'Eine neue Tasttäuschung.' [If with eyes closed the finger is rubbed around the outer rim of a glass, the circle appears exaggerated; if around the inner edge, the circle appears small.] **J. Kollarits.** 'Ueber eine taktile und akustische Täuschung.' [A spiked ferrule that has worked loose at the end of a walking stick gives the impression, to touch and hearing, of a hollow rod containing a loose metal tongue (sword-stick). The illusion is assimilative.]

VIII.—NOTES.

MIND ASSOCIATION.

THE Meeting of the Mind Association will be held this year on Friday, 24th September, at 5 p.m., in Magdalen College, Oxford.

CONGRESS OF PHILOSOPHY.

OXFORD, 24th-27th September, 1920.

PRELIMINARY NOTICE.

The following Societies will take part in the Congress :—

The American Philosophical Association.
The Aristotelian Society.
The British Psychological Society.
The Mind Association.
The Oxford University Philosophical Society.
The Société Française de Philosophie.

The prospective arrangements (subject to alteration) are :—

Friday, 24th September.—Opening Address by M. Henri Bergson on the subject, "Création ou le Nouveau," to be followed by discussion. Lord Haldane will preside.

Saturday, 25th September.—A Symposium on "The Philosophical Aspect of the General Theory of Relativity," by Prof. Pierre Langevin, Prof. F. A. Lindemann, Mr. W. D. Ross, and Dr. C. D. Broad.

A Symposium on "Does Thinking consist merely in Language Processes?" by Miss E. M. Smith and Mr. F. C. Bartlett, Dr. G. H. Thomson, Prof. T. H. Pear, Prof. John B. Watson, and Prof. A. Robinson.

A Paper for discussion on "Disorders of Symbolic Thinking due to Local Lesions of the Brain," by Dr. Henry Head, and a Paper in reply by Dr. R. Mourgue.

An Address by M. Émile Boutroux, "L'usage de l'intelligence la plus propre à nous faire connaître la Nature," to be followed by discussion.

Sunday, 26th September.—A Special Service in the Cathedral, with sermon by the Very Rev. T. B. Strong, Dean of Christ Church.

A Symposium on "The Relation of Religion and Ethics," by Prof. Édouard Le Roy, Prof. J. A. Smith, Principal L. P. Jacks, and Baron F. von Hügel. M. Belot, Prof. Bouglé, Prof. Chevalier, of the University of Lyons, and Prof. Gilson, and Prof. Vermeil, of the University of Strasbourg, will take part in the discussion.

A Symposium on "Mind and Medium in Art," by Mr. C. Marriott, Mr. A. B. Walkley, Prof. H. J. Watt, Mr. E. Bullough, and Mr. C. W. Valentine.

Monday, 27th September.—A Symposium on "The Meaning of 'Meaning,'" by Dr. F. C. S. Schiller, Hon. Bertrand Russell, and Prof. Harold H. Joachim.

A Symposium on "Is the Existence of the Platonic Εἶδος Presupposed in the Analysis of Reality?" by Mr. C. E. M. Joad, Prof. R. F. A. Hoernlé, Miss L. S. Stebbing, and Mr. A. D. Lindsay.

A Symposium on "The Function of Nationality," by M. Marcel Mauss, Prof. Elie Halévy, Prof. Théodore Ruyssen, M. René Johannet, Sir Frederick Pollock, and Prof. Gilbert Murray.

The Session will be open to Members of the constituent Societies and visitors introduced by them. There will be a subscription of 15s. to meet the cost of printing and distributing the Papers. Symposium Papers will be taken as read, and the Authors will open the general discussion. Members of the Societies unable to attend the Session and desiring to receive the Papers can obtain them by paying the subscription.

The Papers will be subsequently published in the Aristotelian Society *Proceedings*, the *British Journal of Psychology*, MIND, and the *Hibbert Journal*.

Accommodation during the Session will be offered to Members by the following Colleges: Balliol, Corpus Christi, Magdalen, New College, and (for ladies) St. Hugh's. Other Colleges offering accommodation will be announced later.

The charge is expected to be on the scale of Bedroom, Breakfast, and Lunch per day, 7s. 6d.; Dinner, 2s. 6d.

The Meetings will be held in a College Hall.

Mr. A. H. Smith, New College, Oxford, will act as Honorary Secretary for all matters which concern the local arrangements, and will receive subscriptions and applications.

Communications in regard to Papers and Symposia should be addressed to Prof. H. Wildon Carr, 107 Church Street, Chelsea, London, S.W. 3.